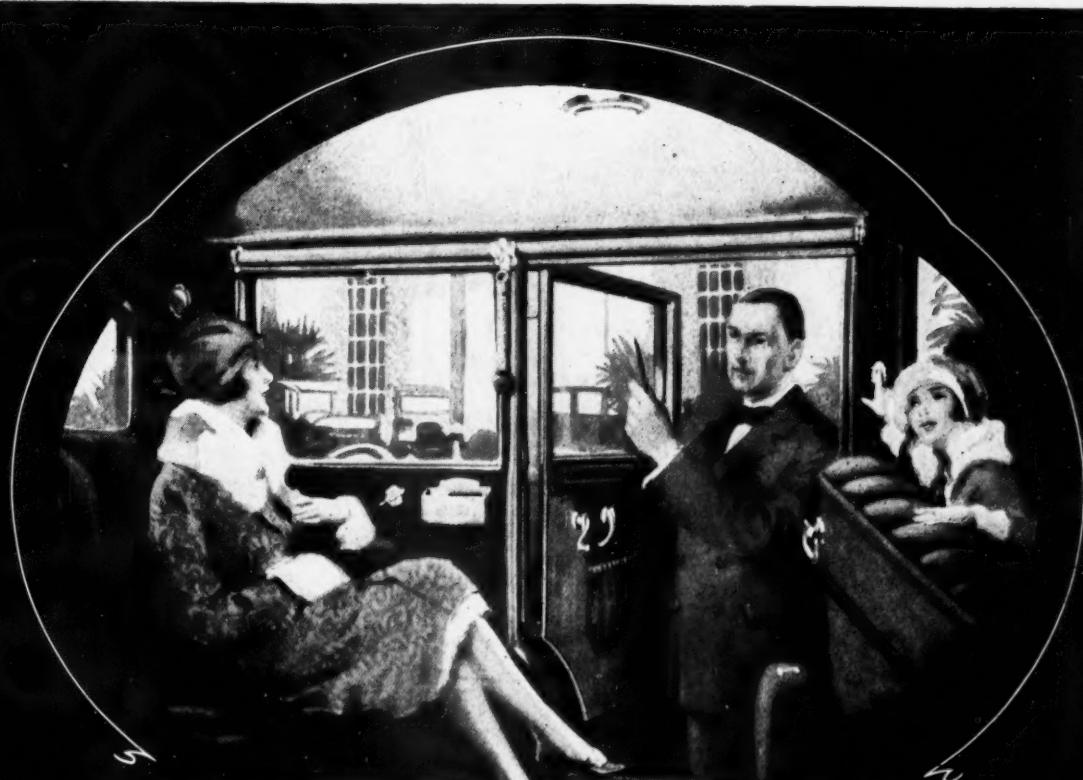


# AUTOMOTIVE INDUSTRIES

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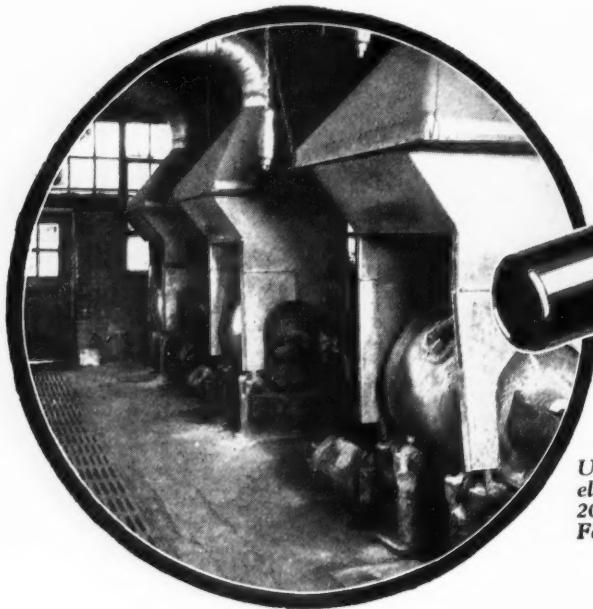
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# AUTOMOTIVE INDUSTRIES

VOLUME 56

Philadelphia, Saturday, May 7, 1927

NUMBER 18

## Car Sales Threatened by Higher Retail Financing Rates

*Attitude of banks in regard to credit, if persisted in, may force finance companies to advance rates and result in curtailment of instalment sales.*

By John C. Gourlie

WITH an overwhelmingly large proportion of automobile time sales being done today on sound credit terms, and with repossession no longer on the upgrade, retail financing nevertheless is as much as ever in a state of flux and turmoil as a result of a variety of causes and misunderstandings, not all of which by any means are the fault of the finance companies.

The national credit organizations, as a matter of fact, are striving valiantly and effectively to work out of a situation which was forced upon them, and they deserve the support of the industry in a period when instalment selling, as practised in the sale of automobiles, was never under stronger attack. The tendencies now evidenced, if unchecked, might lead to:

1. Banking control over automotive sales.  
2. Higher financing rates.

3. Curtailment of instalment credits.

4. Curtailment of sales.

All of which would be undesirable, to put it mildly. Just one of the many signs of the changes going on in the open and underneath was the recent adoption by several important companies of new repurchase plans for retail

sales. Virtually all the national financing organizations are now wholly or partly on this basis and the old argument about the merits of the two principal methods of handling instalment paper seems to have lost some of its pungency.

Into this venerable discussion, the banker's voice of authority has been injected of late, and, at the risk of doing injustice by implication to some sound finance companies whose relations with their banks have always been of the best, it is necessary to record that banking pressure has been responsible for a part of the recent tendencies in the financing field.

No doubt the bankers have been influenced by the current propaganda against instalment selling, which is fostered largely by hidebound business conservatives and industries unable to benefit by the plan. But it is hard to deny that of late the bankers have had what at least in appearance were good causes for concern.

Last year, after an almost disastrous period of loose terms, the national companies tightened down and most of the local companies followed. They had to, for long terms had been amply proved ruinous to the companies. Everyone

### Automobile Companies Can Help Financing Organizations

THE excessive gain in repossession last winter, in so far as it was not due to local conditions such as affected, for instance, some parts of the South, was apparently due to the high pressure new car sales campaigns put on last summer. The extraordinary volume of sales in August was not attained without unfortunate later consequences.

The average repossession comes six months after purchase, and the repossession resulting from the summer campaign came in the winter, when there is normally a slight upturn anyway, as owners are more disposed to let their cars go when there is no incentive to operate them.

Pushing the dealers tends to increase financing hazards. There would be less pressure on the merchants if there were not so much emphasis on volume, but more on a higher profit per unit.

had agreed that sound terms were the answer to excessive repossession and losses thereon. But what happened? Last winter repossession again began to increase, and the increase was greater than the normal winter upturn.

This alone might have been passed by without serious disturbance, but there came to complicate matters the failure of Hare & Chase, Inc. This was a heavy blow to the whole business, for the company seemed to be in good shape and making an excellent showing almost up to the time of the crash. As it proved, by far, the greater proportion of the company's paper was sound, and the difficulty came over a single account involving the rediscounting of taxicab paper. Too much money was in this one account for the company to stand the strain when the finance company, whose paper had been rediscounted, failed.

#### A Hastily Drawn Conclusion

The conclusion rather hastily drawn by the banks apparently was that the financing business was highly dangerous and that no-recourse financing was particularly to be avoided. No doubt the determination followed, that in the future the accounts of finance companies would be carefully scrutinized by their banking and bonding connections, which might be a good thing, although a repetition of the experience described is almost unthinkable.

On the other hand, the corollary determination to support recourse plans does not rest on quite the same foundation, as the merits of the two plans did not directly enter into the failure. As a matter of fact, the bad account was in effect recourse paper, as it bore the indorsement of the finance company that had handled the original sales.

But where the rub comes is the bankers' reaction to what they may consider the general insecurity of automobile financing and to the upturn in repossession.

The characteristic reply to such a situation is a curtailment of credit. If the finance companies have less money to lend, it may be said, they will concentrate on sound business. Therefore, according to common report, it is the purpose of many of the influential bankers to bring down credits to finance companies to a maximum of three times the capital and surplus. Such a maximum would be well below the current average.

The finance companies say, and offer figures to show, that they could not make a satisfactory profit on such a meager line of credit. Hence, if the intention is adhered to, there must follow financing rate advances and at least a temporary period when funds for financing will be scarce. If rates are raised and the business again becomes profitable, there is no reason to believe that additional capital will not be attracted.

#### Concern Less Acute Now

Probably no such situation will arise. There is already evidence that the concern of the banks is less acute than it was a few weeks ago. Repossessions are again falling and the finance companies in many instances have been able to convince their banking connections that there was no reason for serious alarm. While credit continues easy the banks will be disposed to look favorably on finance business but they are going to watch it more closely.

There remains to consider some of the measures being taken by the finance companies to put the business on a firmer basis. Here there are developments that may be of the greatest long-run value to the automotive industry and trade. For one thing, several

of the important companies have adopted a rigid policy toward used car financing. In some instances this takes the form of a refusal to finance more than the Blue Book valuation of a car, which is ordinarily very conservative.

Such a policy will have the effect of curtailing credits to used-car transactions where an excessive price is established. It should help bring down trade-in allowances and to release capital for new car financing. It is a foregone conclusion that if the finance companies are up against a real shortage of credit they will curtail first on the used car end, which is normally where the greatest losses are suffered. But if this should go as far as a downright refusal to finance used cars, there would of course be an immediate reaction on new car sales.

On both new and used cars, fewer long-term notes and fewer low down-payments are being taken now than at any other period in recent years, by every indication. This again is a healthy development, but after all, sound terms are limited in effect if dealers and finance companies do not watch their credits. The finance companies are determined to do so, and the dealers will be helped in the same direction if they are not under too heavy sales pressure.

In many quarters the adoption and extension of recourse plans will be hailed as what the industry and the finance companies always needed. The actual conditions are not so simple. A dealer's indorsement on instalment paper is not worth anything unless the dealer is in good financial shape and is a good merchant.

#### Reserves to Cover Repossessions

One way, however, that recourse plans can be made safer, as well as more attractive to the dealer, is the building up of adequate reserves to cover repossession losses. This is one of the features of the new Commercial Credit plan, described last week in *Automotive Industries*. Even more indicative of a determination to place the business on a sound basis was the adoption by Commercial Credit of a sliding scale of rates based on repossession experience with all lines of cars as well as different sections of the country. A widespread adoption of such a plan would place a premium on good merchandising and good dealer organizations to the ultimate good of the industry.

Straight recourse plans are not being followed to any great extent. The popular form is the repurchase agreement, in which the finance company makes the repossession where necessary but the dealer is obligated to repurchase the repossessed car from the finance company. Under its new management, Hare & Chase, Inc., has adopted this plan, with a substantial reserve for dealers.

The reserves under the new plans serve not only as protection to the dealer and financing organization, but as in the absence of losses they tend to increase, and as part at least of the excess reserve is returned to the dealer, an additional cash incentive to sound credit operations is held out.

In view of the efforts being made by the finance companies to stabilize the business for the benefit of the industry as well as of themselves, they seem to have earned at least the moral support of the manufacturers. Financing is the most vital part of automotive selling in this present day, and all the interests entering into it ought to stand together in opposition to the deluge of adverse propaganda and to further a better understanding of instalment selling by the banks.

# Isotta-Fraschini Airplane Engine is 12-Cylinder V Type

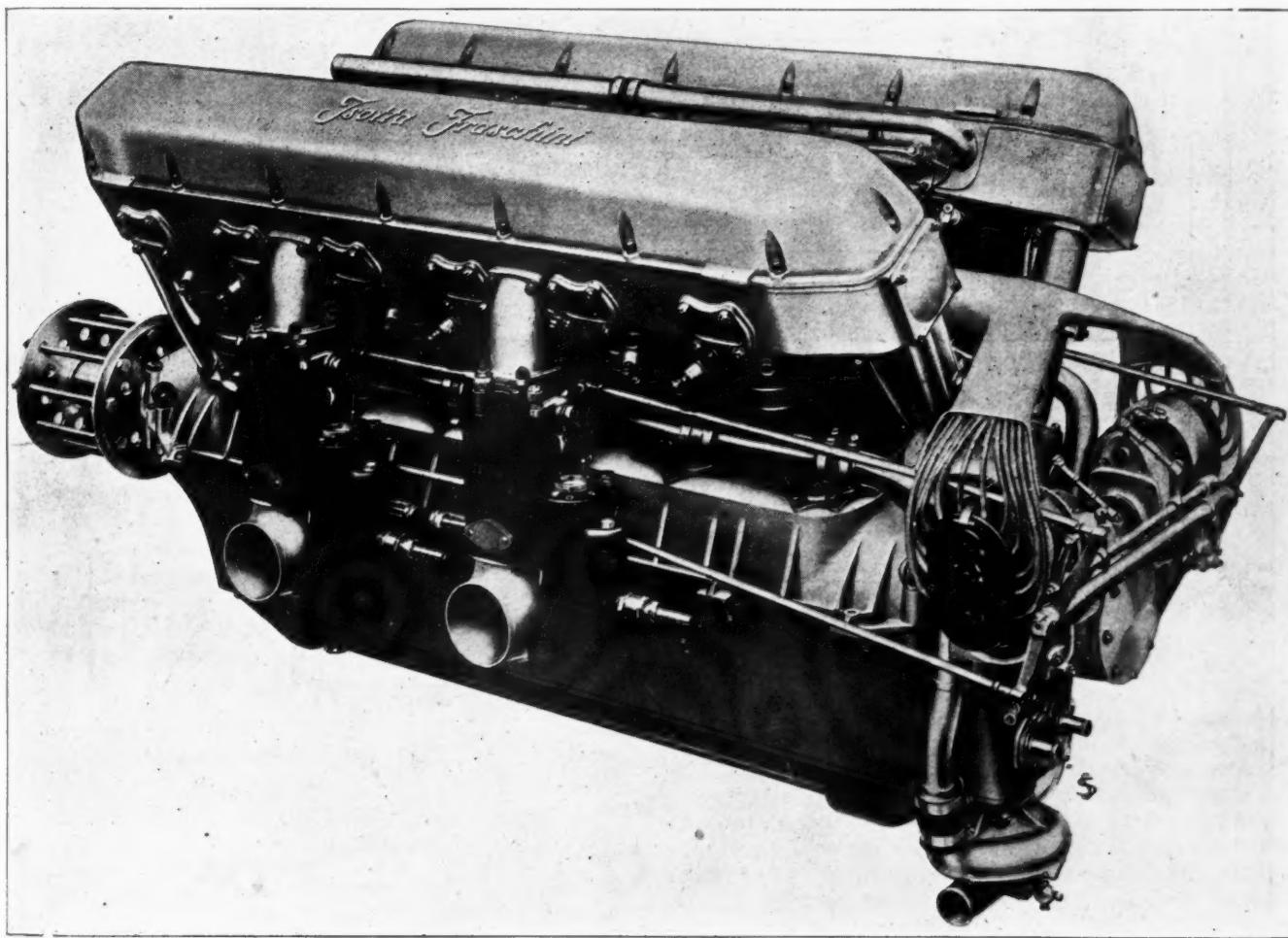
*Has piston displacement of 1691 cu. in. and develops 500 hp. at 1800 r.p.m. with compression ratio of 5.5. Two of them used in Savoia-Marchetti seaplane flown here by de Pinedo.*

MUCH interest was attracted recently by the so-called Four-Continents flight of Commander Francesco de Pinedo of the Italian Navy who, in a Savoia-Marchetti seaplane, starting from Sardinia off the coast of Italy, flew along the northern and western coast of Africa, across the southern Atlantic to Brazil, and thence across the vast unexplored regions of South America, the Caribbean Sea and Gulf of Mexico to this country, where his trip was interrupted by the accidental burning of his machine.

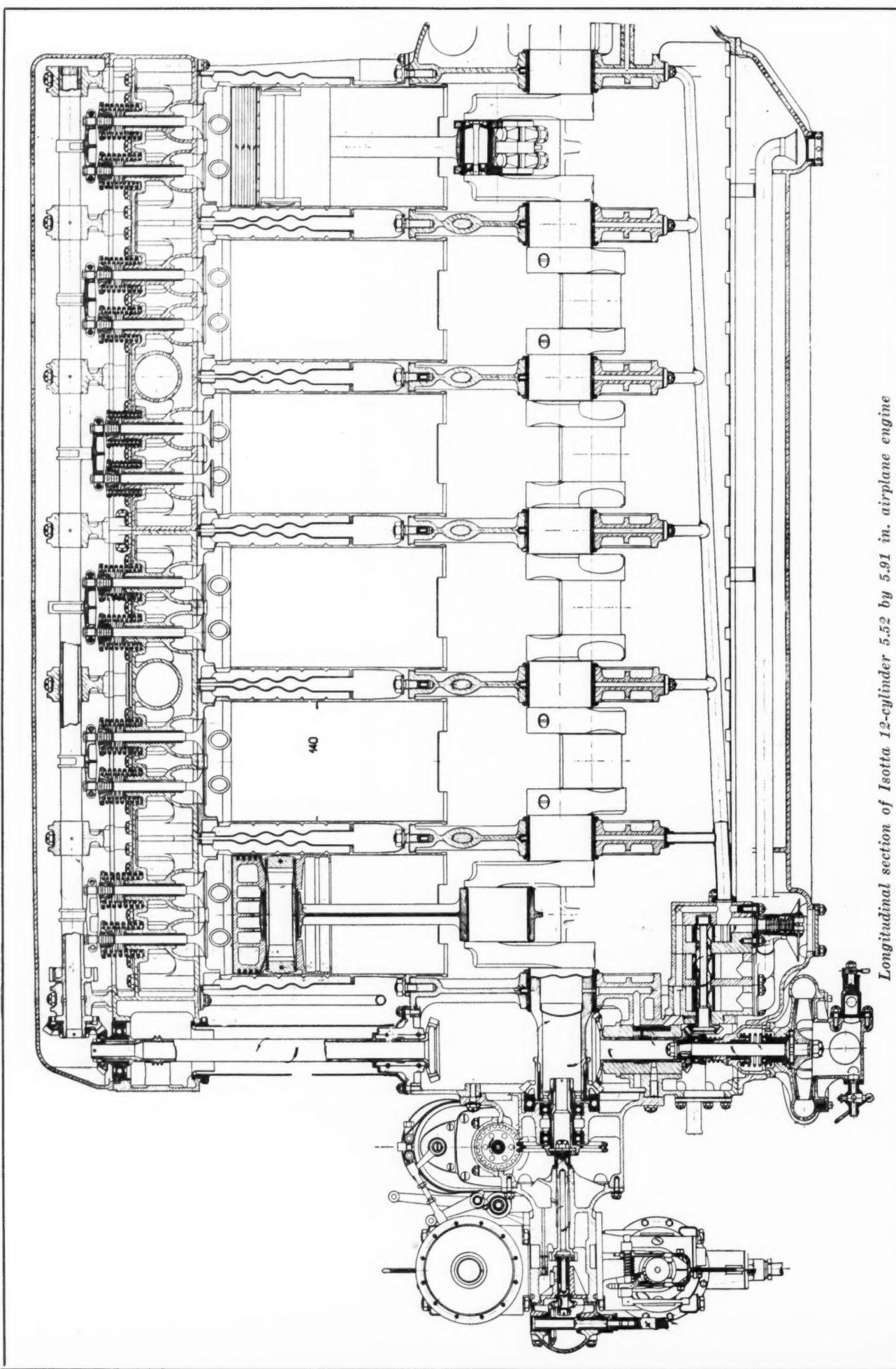
The plane flown by Commander de Pinedo was equipped with two Isotta-Fraschini "Asso 500" engines,

which in this long flight showed themselves possessed of excellent qualities. The "Asso 500" engine, built by the Isotta-Fraschini Co. of Milan, has successfully passed the Italian Government official test involving fifteen 10-hour runs, a 24-hour non-stop run and various other trials. It is being used by the Italian Government and by several private air service corporations. In its construction wide use is made of alloy steel and of magnesium-aluminum alloys.

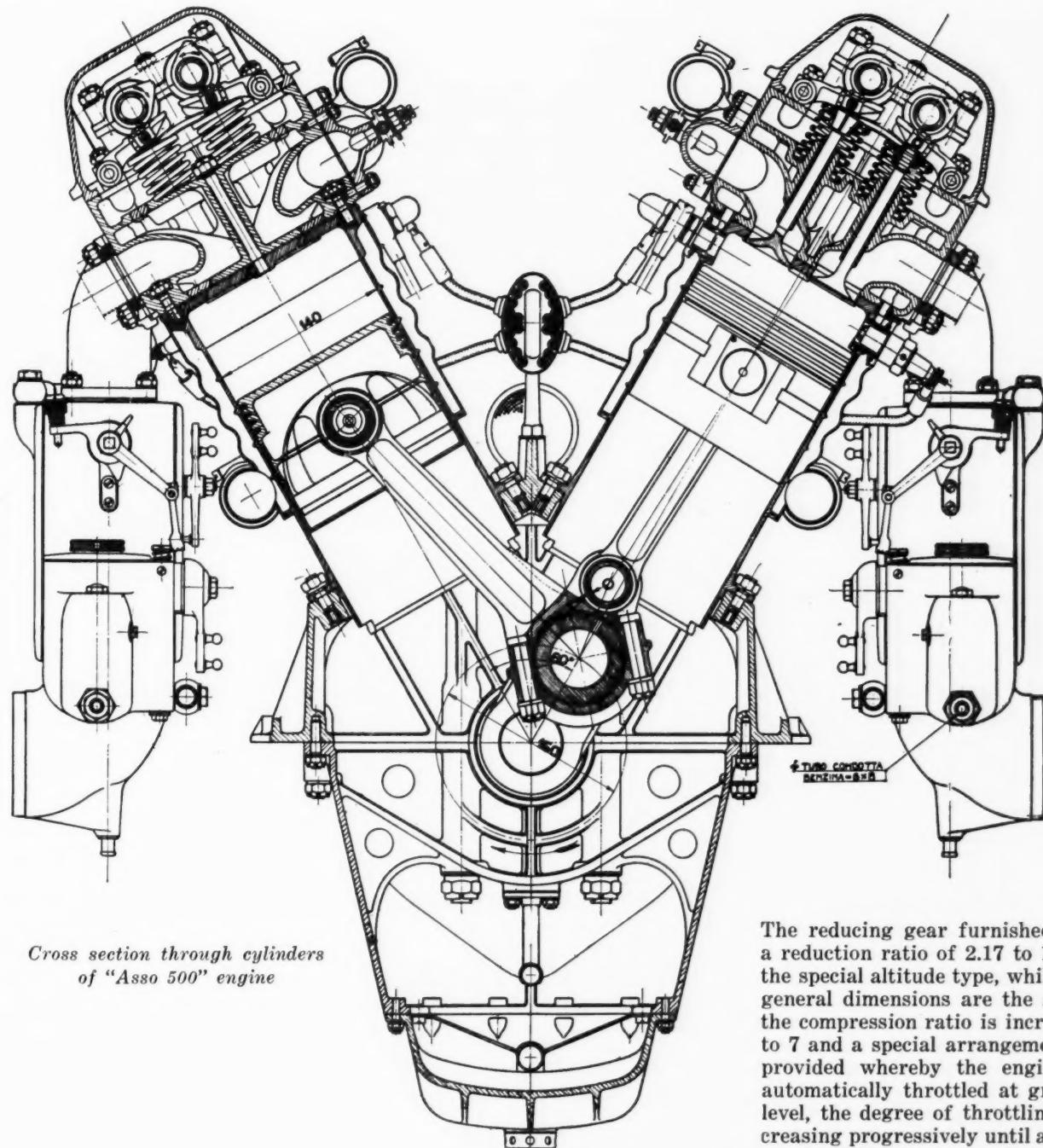
The "Asso 500" engine, of a nominal rating of 500 hp., is furnished either for direct drive or with a reducing gear, and also in a special form for altitude flying.



Isotta-Fraschini "Asso 500" engine as fitted to Pinedo's Four-Continent flight seaplane



Longitudinal section of Isotta 12-cylinder 5.52 by 5.91 in. airplane engine

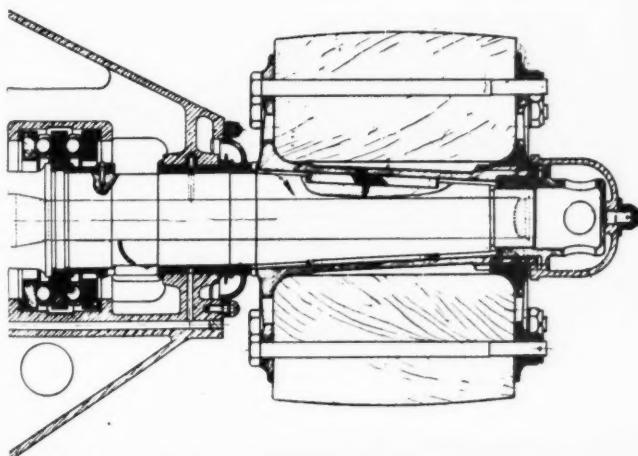


Cross section through cylinders  
of "Asso 500" engine

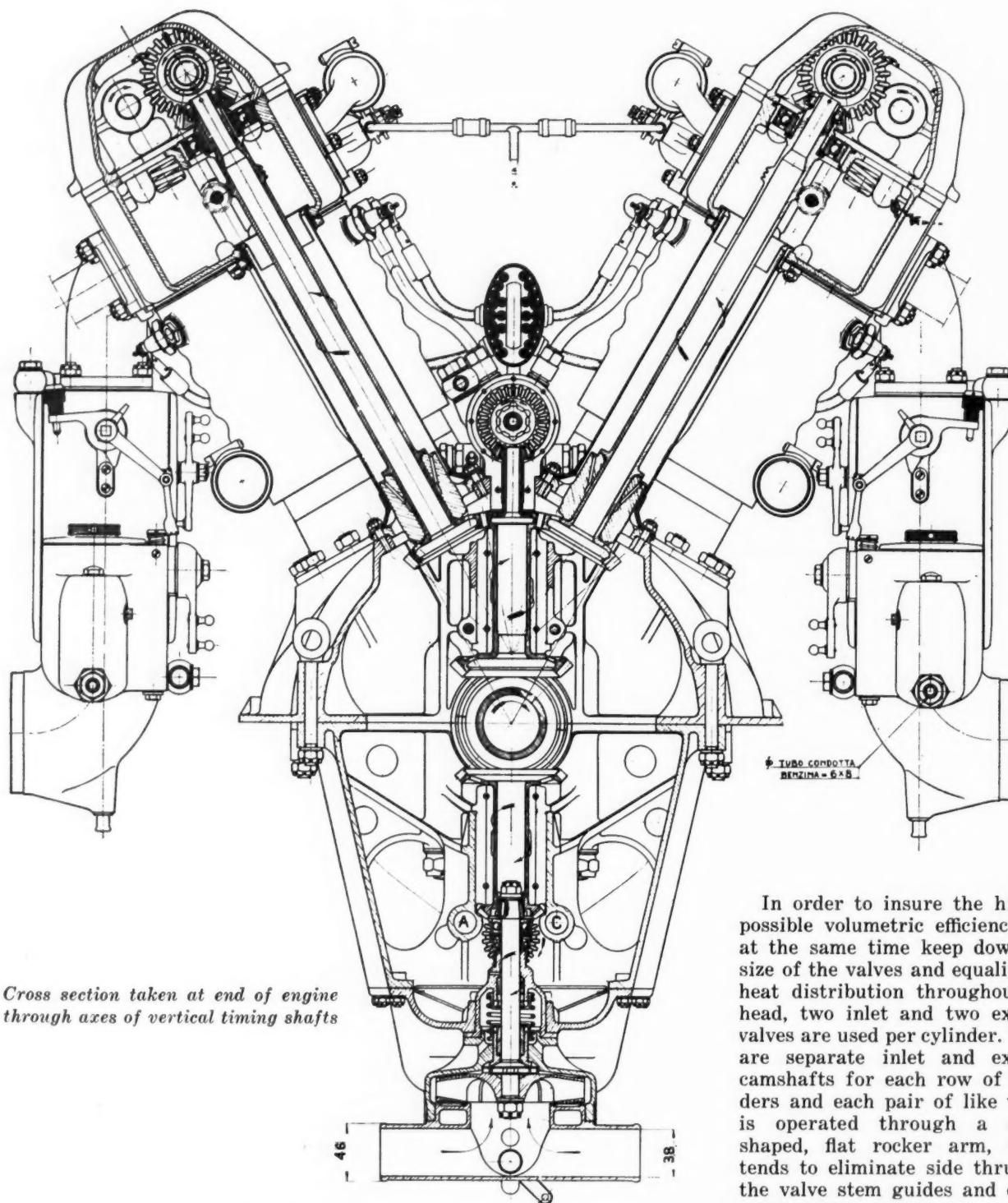
The reducing gear furnished has a reduction ratio of 2.17 to 1. In the special altitude type, while the general dimensions are the same, the compression ratio is increased to 7 and a special arrangement is provided whereby the engine is automatically throttled at ground level, the degree of throttling decreasing progressively until at 15,000 ft. altitude the throttle is fully opened. Engine power is therefore kept constant from the ground up to 15,000 ft. altitude.

The engine has 12 cylinders, arranged in two rows of six, set at an angle of 60 deg. Its bore is 140 and its stroke 150 mm. (5.52 by 5.91 in.), giving a total displacement of 27.7 liters or 1691 cu. in. With a compression ratio of 5.5 it has shown on the brake, 506 hp. at its normal speed of 1800 r.p.m.; 518 hp. at 1850 r.p.m., and 543 hp. at 2000 r.p.m.

Each cylinder is a separate steel forging and has the sheet metal water jacket welded to it. The head of the cylinders has flat top and bottom surfaces, and the four valves have their seats directly in the metal thereof. The cylinder head is a single aluminum casting to which the cylinders are bolted, making an extremely stiff assembly. Cooling water passes from the cylinder jackets to the head jacket through holes in both parts, a special type of gasket being used to effect a watertight joint. This cylinder-and-head construction is one of the outstanding features of the engine and makes for



Rear end of crankcase and propeller hub



*Cross section taken at end of engine through axes of vertical timing shafts*

great stiffness combined with lightness.

The crankcase consists of three castings of Elektron (a magnesium-aluminum alloy) which are greatly stiffened by suitably located ribs. The upper part carries the cylinders and the crankshaft bearings, and it houses the timing gears at the rear end. Along the bottom edges of this part run wide flanges by which the engine is supported on the bearers of the fuselage or nacelle. The central part, or the lower half of the crankcase proper, carries the oil pumps and the oil leads to the crankshaft bearings, while the lower part or oil sump carries the water pump, and upon being removed gives free access to the connecting rod bearings. Lastly, the rear bracket, which is bolted to the upper and central parts, carries the magnetos and their controls, the gasoline pumps and the carburetor controls.

In order to insure the highest possible volumetric efficiency and at the same time keep down the size of the valves and equalize the heat distribution throughout the head, two inlet and two exhaust valves are used per cylinder. There are separate inlet and exhaust camshafts for each row of cylinders and each pair of like valves is operated through a cross-shaped, flat rocker arm, which tends to eliminate side thrust on the valve stem guides and consequent uneven wear.

The inlet camshafts are driven through two inclined hollow shafts, and the bevel gears driving these shafts, as well as the spur gears through which the exhaust camshafts are driven from the former, are fastened to their respective shafts by means of splined joints comprising involute splines. The valves are held on their seats by two concentric coiled springs each, the two springs being wound right and left-hand, respectively, whereby interference between them is said to be obviated.

The crankshaft is a chrome nickel steel forging, heat-treated, which combines high tensile strength with great surface hardness and consequent resistance to wear. It is supported in eight bearings, one on each side of each throw, and an additional bearing at the rear close to the propeller hub. Between the two rear

bearings is located a double-direction ball thrust bearing which takes propeller thrust in both directions. All crankshaft bearings are of the conventional bronze-back, babbitt-lined type. The crankshaft is drilled through from end to end, for lightness and for the distribution of oil.

Pistons are metal mold castings of aluminum alloy; they are heat-treated (annealed) and are of very low weight. Each piston carries four cast-iron piston rings, the lowermost of these being an oil scraper ring, from the groove of which the excess oil returns to the crankcase through a number of drill holes in the wall of the piston skirt. The piston pin floats.

The pistons of each pair of cylinders having axes in the same transverse plane connect to the same crankpin, one directly through a master connecting rod, the other through a shorter rod articulated to the master rod. The articulated rod has a bearing on a hardened pin fastened into two drilled lugs formed on the master rod head. Both connecting rods are of I section, and the master rod is stiffened by two ribs.

Four Zenith vertical-outlet, double-venturi type carburetors are fitted, these being specially made for this particular engine. They are located on opposite sides of the engine adjacent to the cylinder rows, and are readily accessible for inspection and can be easily dismounted, as they do not extend below the engine bearers. These carburetors are provided with hot water jackets through which water from the engine cooling system is circulated by the centrifugal pumps, and the heat supply through the water jackets can be regulated at will by the pilot. They are also provided with an altitude corrector to counteract the tendency of the mixture to become over-rich with increasing levity of the atmosphere at high altitudes. Fuel is fed to the carburetors by two gasoline pumps mounted on an extension of the magneto bracket and driven from the engine.

Ignition is by two 12-cylinder magnetos, each cylinder being provided with two spark plugs, and each plug

connected by a cable to one of the magnetos. The magnetos are driven through flexible couplings of a type which allows of very close adjustment of their timing, and both are controlled as to time by a single lever.

Full pressure lubrication is effected by means of a triple pump; one section of the pump draws oil from the reservoir and forces it through the various leads to the bearings; the second draws oil from the forward, and the third from the rearward end of the sump, both forcing the oil through a filter of large surface area and discharging into the reservoir. The reservoir is very accessible for inspection and cleaning. The triple oil pump is located inside the lower half of the crankcase at its rear end, and can be easily removed when required. A pressure-relief valve is combined with the pump.

Cooling water is circulated by a centrifugal pump with double outlet, for connection to the two rows of cylinders. Starting is effected by means of compressed air which carries gasoline vapors in suspension. The air is distributed to the different cylinders by a rotary distributing valve which is driven through bevel gears from the vertical shaft of the timing gear. The compressed air is either taken from a reservoir carried on board or may be supplied by a separate motor-compressor group.

The weight of the engine, dry and without propeller hub, is 880 lb., and with propeller hub, 924 lb. This is equivalent to 1.69 lb. per horsepower at maximum and 1.78 lb. at normal output.

This engine is now being supplied also as a power unit for fast motor boats. It is then fitted with a reduction gear and friction clutch, or with a planetary reversing gear. A special cooling system is used in connection with such marine installations, comprising a gear pump circulating salt water through a refrigerator cooling the fresh water which is being circulated through the engine jackets and the refrigerator by the usual centrifugal pump. It would undoubtedly make a good engine for racing boats.

## Results of German and American Tractor Tests

THE German Secretaries for Transport and for Agriculture in 1925 organized a contest for small farm tractors with a view to promoting motorization of German farms. In connection with this contest a scientific investigation of six of the competing tractors was made at the Automotive Experimental Laboratory of the Berlin Technical College, of which Prof. Dr. Gabriel Becker is the director. Prof. Becker also was requested by the Government officials to make similar tests and investigations on foreign tractors.

The results of the tests, together with data obtained from the Nebraska State University on the occasion of a visit to this country, form the basis for a book on "Motorschlepper" (Motor Tractors) by Dr. Becker which has just been published by M. Krayn, Berlin W. The six German tractors which were studied are the W. D., Pohl, Lanz Felddank, Lanz Ackerbulldog, Benz-Sendling and M. T. W., and the five foreign tractors, the Fordson, Cletrac, Holt, Bear and Renault. Of the German tractors the two Lanz are fitted with hot-bulb engines, while the Benz-Sendling has a Diesel engine. The book is divided into two sections, the first of which comprises a summary of general suggestions for tractor design based upon the data collected and test results obtained, while the second contains the test results themselves. Illustrations of the tractors tested, both

half-tones and mechanical line drawings, are also given.

The following summary of the operating values of the tractors in the tests gives a good idea of the experimental results given in the book. (1) Wheel hub output and net drawbar pull on all gears; (2) Engine horsepower throughout the speed range; (3) Rolling resistance and efficiency of the propelling members (wheels or chain tracks); (4) Transmission losses, the difference between values 2 and 1; (5) Drawbar horsepower of the tractors in the field and on the road; (6) Fuel consumption; (7) Slippage and adhesion of the propelling members; (8) Modification of axle loads due to the peripheral force on the driving wheels; (9) Temperatures attained during a 10-hour continuous test, (a) by the cooling water, (b) by the engine oil, (c) by the transmission oil; (d) by the rear axle housing oil; (10) Output, fuel and oil consumption during the 10-hour test; (11) Effect of air cleaner and muffler on engine power; (12) Wear of transmission parts and the cylinder bore.

The book is got up in the same style as that on the "Scientific Determination of the Merits of Automobiles," by Dr. Riedler, which was based on tests made in the same laboratory and which is generally known among American engineers; it bears evidence of painstaking work and can be recommended to those in need of the class of information it contains and who read German.

# Profits This Year Holding Up Close to 1926 Levels

*First quarter financial statements show some companies doing better than last year and industry as a whole is making satisfactory record.*

By Norman G. Shidle

THE financial flowers of the automotive industry's first quarter are beginning to bloom. Some of them are causing the eyes of their cultivators to sparkle with delight; others are being met by their gardeners with calm resignation and sincere hopes for better fruition of second quarter efforts.

All the returns aren't in yet, but enough information has been spread on the records to make reasonably clear that profits for the industry as a whole are holding up fairly well and that, thus far at least, declines in net income aren't as great as some had feared they were going to be.

First quarter statements for such important concerns as Dodge, Hudson, Willys-Overland, General Motors, Hupp, Nash, Packard and Studebaker already have been issued as we write. Out of this group of eight typical manufacturers, five failed to make as much the first quarter this year as they did in the first quarter of 1926, while three went over their 1926 marks by a goodly margin.

Taken as a group, however, the balance is well on the favorable side of the ledger. Profits for the eight companies combined exceed those of the same combination in January, February and March last year by \$4,067,000. General Motors alone, it may be objected, accounts for a \$7,639,790 gain and thereby makes the picture slightly misleading. It doesn't really have that effect, however, since General Motors itself is composed of five separate passenger car companies which have progressed during the last three months at quite distinctly different rates. The only valid objection to inclusion of the General Motors figures in total summaries of this kind is the fact that so many subsidiary organizations outside the vehicle and even outside the automotive field contribute

to its total profit, due to its widely diversified interests.

The first quarter statements show clearly the success which is being achieved by Willys-Overland and Hudson in their drives to regain the rather considerable ground which both lost last year. Both of these organizations, with new lines and renewed selling efforts, have passed their 1926 marks both in profits and production. And,

what is particularly encouraging in both instances, a very definite increase in the profit per car was recorded as well.

All along the line, the figures on profit per car are encouraging when taking into consideration the extremely strong tendency of unit profits to catapult downward, which has been prevalent for some time back.

**L**IIGHT is shed by this article on the financial fortunes of the industry during the first three months of 1927.

All along the line, the figures on profit per car are encouraging when taking into consideration the extremely strong tendency of unit profits to catapult downward, which has been prevalent for some time back. In the case of a number of companies that trend has continued, of course, particularly where price cuts of any magnitude have been made. Of the seven companies outside of General Motors noted, however, four made a greater profit

per car than in the first quarter of 1926, while only three made less. These figures are rather significant, when considered in conjunction with the fact, already mentioned, that of these seven companies, five showed smaller net earnings in the first quarter than in the same period last year and only two achieved an advance in net earnings.

Hardly a wide enough range of parts and accessory company first quarter financial figures is available yet to make possible even an approximate quantitative estimate of what has happened. From the few statements already out, however, and from specific information informally obtained, it is evident that the parts makers have been continuing to feel the press of competition. Parts prices in general are somewhat lower than at this time last year, despite the fact that last year's levels

have been maintained on some units. Income gains have been made by a number of parts companies, nevertheless, partly through increased business and partly through production economies. Bendix Corp., Electric Auto-Lite, Mullins Body Corp. and Gabriel Snubber Co. were among the early statements to show distinct financial progress in the first quarter of this year compared with the first quarter of 1926.

The financial world gradually is getting to understand automotive values and possibilities more clearly, and the result is favorable to continued progress of the industry. Despite the general decline which has been under way in the stock market since 1925, for example, automotive manufacturing concerns are holding up rather well in comparison with industry in general.

A compilation made by L. F. Guenther and printed by S. S. Fontaine in the New York *World* of April 25, for instance, shows "since 1925 tremendous declines in many stocks and liquidations in others." Out of the 242 standard stocks for which figures are given, 185 were shown to be at or near bottom on April 10, 1927, the calculations being made from 1925 to that date. That is, about 75.5 per cent of this typical list were at or near bottom on April 10. Only 64.3 per cent of the 14 passenger car and truck companies listed, however, are at or near bottom, while about 63.3 per cent of the 11 parts and accessory concerns shown are at or near bottom. The average for the whole automotive group in this class was almost exactly 64 per cent or 12.5 per cent better than the average for the whole list. The

figures are particularly favorable as reflecting stock market opinion of automotive values in view of the fact that several outstanding successes among the automobile makers, such as General Motors, Nash and Chrysler, do not appear in Mr. Guenther's list. The car companies included are Chandler, Dodge, Gardner, Hudson, Hupp, Moon, Packard, Paige, Peerless, White, Mack, Pierce-Arrow, Studebaker and Willys-Overland. The parts and accessory companies in the list are Ajax Rubber, American Bosch Magneto, Gabriel Snubber, U. S. Rubber, Hayes Wheel, Martin Parry, Motor Wheel, Mullen Body, Murray Body, Reynolds Spring and Stewart-Warner.

Throughout the range of vehicle, parts and accessory manufacturers, however, the increasing variation in success in proportion to individual efforts and conditions still is the most outstanding feature. With the industry growing every month into a condition of greater basic stability, qualities of efficiency in the shop and in the marketing effort, dollar-for-dollar value of product, attractiveness and value of design and similar factors continue to become more dominant in determining success. No longer does the progress or retardation of an automotive enterprise rest very largely on the changing tides of general business and general demand; the effectiveness of the functioning of the various units of individual organizations is playing a more vital role every day—and there is every indication that this tendency will become even more pronounced as the months and the years go on.

## Most Brake Drums Low in Carbon Content

AS was pointed out in an article appearing in *Automotive Industries* August 26, 1926, manufacturers of brake linings, many bus and truck operators and a number of bus and truck manufacturers believe that much of the trouble now given by brakes on such vehicles might be eliminated by the general adoption of high carbon drums.

It was suggested that there is almost no practicable limit to the hardness and wearing qualities that may be built into brake lining materials but, that as conditions are at present, a definite limit is placed on this development by the nature of drums commonly used for bus and truck braking systems. In braking action something must wear and it is generally considered preferable to confine this wear to the lining than to permit the drums to be worn and scored.

Because of this it is obvious that the hardness of the drums and their resistance to wear becomes the limiting factor in the design of lining material which may be used with them. The more carbon contained in the drum material the harder the drums will be and the harder and more resistant can the brake lining material become without scoring the drums. According to some authorities 0.45 per cent carbon is about the minimum which will permit the use of a lining hard enough to give reasonable service and life under severe operating conditions met with in bus, truck and taxicabs.

With this in mind it is interesting to note the result of a survey which John F. Bolger, vice-president, Allbestos Corp., Philadelphia, Pa., and one of the pioneers in the campaign for high carbon brake drums, has recently completed. Mr. Bolger collected sample brake bands from about 20 different buses, trucks and taxicabs of various makes and had them

analyzed by a chemical laboratory. The accompanying table lists the findings of these analyses.

Of the 21 samples submitted, only five have the minimum carbon content of .45 per cent which has been suggested as the lowest value permitting satisfactory service. Of this five, three are buses, one is a truck and the fifth a taxicab.

The added expense of employing high carbon steel drums has been offered as a serious obstacle to their general adoption and this view is partially substantiated by the fact that the three buses whose brake drums showed high carbon content are all relatively high priced as is also the case with the truck and taxicab.

If it is true that high carbon drums are required before satisfactory braking service can be obtained, the number of vehicles investigated which have very little carbon—even less than one-tenth per cent—offers a reason for some, at least, of the complaints made by operators in regard to defective and troublesome brakes.

Carbon Content of Brake Drums  
on 25 Vehicles

Used on	Carbon Content	Used on	Carbon Content
Taxi .....	.095	Bus .....	.325
Taxi .....	.665	Truck .....	.11
Bus .....	.535	Taxi .....	.125
Bus .....	.075	Truck .....	.53
Bus .....	.07	Taxi .....	.10
Truck .....	.18	Bus .....	.265
Bus .....	.20	Bus .....	.67
Bus .....	.10	Bus .....	.38
Bus .....	.125	Bus .....	.415
Bus .....	.26	Bus .....	.460
Bus .....	.10		

# Economy Effected by Welding Body Panels Out of Small Sheets

Advantages of this process are described by Pierce-Arrow engineer in paper read at annual meeting of the American Welding Society. Many other welding subjects discussed.

By P. M. Heldt

MONG papers on production welding read before the annual meeting of the American Welding Society in New York City, April 27 to 29, was one on "Welding of Aluminum Sheets in the Construction of Pierce-Arrow Bodies," by Fred E. A. Klein and G. C. Hoff, and presented by the former.

Mr. Klein said that in the construction of aluminum bodies it was found advantageous to use comparatively small punchings and weld them up, rather than to stamp large sections in a single piece, as it minimizes the work of drawing and stretching the material over patterns, thus eliminating the need for expensive tools and reducing the labor cost. A further item of economy is the reduction in the amount of scrap produced.

In order to effectively weld aluminum sheets, the welder must have complete knowledge of its behavior under the welding flame, which knowledge can be acquired only by long experience and close observation. Aluminum, which melts at 1215 deg. Fahr., assumes a pasty condition before reaching the melting point. It melts very fast, and for that reason a small, light blow-pipe is used—with a No. 3 tip for sheets of 14 and 15 gage and a No. 2 for sheets ranging from 16 to 20 gage. Acetylene gas mixed with oxygen under pressures of 3-5 lb. p. sq. in. gives a very good flame, the fuel mixture being proportioned by the operator on the basis of practical experience.

To start a weld on thin aluminum sheets, use is made of a small filler rod, usually in the form of a narrow strip sheared from sheet, or of  $\frac{1}{8}$ -in. aluminum wire of 98 per cent purity. Strips are the cheapest, and when used with proper tips and torch give very satisfactory results.

## Oxidation Takes Place

While the weld is being made oxidation takes place on the welded surfaces, some of the metal combining with oxygen, and the oxide formed must be removed, for which purpose the Pierce-Arrow company uses a flux. The flux and oxides that remain on the surface after the weld is completed are removed by washing with warm water and finally blowing with steam. Another method of cleaning welded seams consists in scraping them, but this is not practical on thin sheets, being more expensive than the process described, besides which all welded joints are hand-hammered and finally filed.

Results obtained in welding sheet aluminum depend largely upon the flux used; there are several such

fluxes on the market, and they vary widely in quality. It is also essential that the flame be directed at the work at a slight angle only, as if perpendicular to the surface welded it would blow holes through the sheet.

All welds on Pierce-Arrow bodies are what is known as butt welds. The type known as flange welds is also very satisfactory so far as the result is concerned, but it requires additional labor in making the flange, as well as additional material, and in view of the fact that a total length of welds of 110 to 400 in. is required on different types of body it is considered less suitable.

## Hand-Hammered After Cooling

To insure solid material in the weld, every inch of it is hand-hammered after it has cooled, which gives increased hardness and strength, at the expense of some ductility. The peening action of the hammer, moreover, results in a smooth surface and a more uniform thickness, which facilitates the following operations, such as filing and cleaning, and it tends to prevent the formation of thin sections by the cleaning process. The entire surface of the body is hand-filed and hand-polished, to give a good surface for painting.

Proper hardness is one of the essentials of body sheet, the grade selected for Pierce-Arrow bodies being 2-S-6 gray plate, half-hard. This is easier to handle in the shop than soft material, having less tendency to bend, buckle and dent, and it is sufficiently ductile to permit rolling, flanging, bending and grooving. It often becomes hard in the processes of manufacture through cold working, such as forming and drawing by hammering. If necessary, such hammer-hardness can be removed by annealing, by heating with a gas or gasoline flame to a temperature just sufficient to cause a piece of paper to leave a brown mark when rubbed against the metal. Care must be taken, however, to heat the affected portions uniformly and not excessively, as over-heating results in grain growth and consequent brittleness.

The question might be raised why the joints are not soldered rather than welded. The answer is that no solder for aluminum has ever been discovered which will give perfect results under all conditions. Some soldering on aluminum is being done by the Pierce-Arrow company on other than body work, but it is found that the soldered joints do not have the strength nor the durability of welds, and they are less convenient.

In the discussion of this paper it was brought out that a good method of cleaning the welded aluminum

sheets of the oxides formed during the welding operation is to first dip them in hot water, as near the boiling point as possible; then dip in a 2 per cent nitric acid solution and finally rinse in hot water to remove all traces of the acid.

One member asked the speaker whether hydrogen or acetylene was used as the fuel for welding the aluminum sheets. He said the hydrogen flame had an advantage in that it deposited less carbon, and experiments had shown that a larger percentage of perfect welds was obtained with hydrogen. Mr. Klein in reply said the Pierce-Arrow company used the oxy-acetylene flame and that it used live steam for cleaning the welded sheets.

#### Lincoln Electric Prizes

J. F. Lincoln, of the Lincoln Electric Co., Cleveland, Ohio, spoke on the prizes which his company is offering through the American Society of Mechanical Engineers. His company during the past several years had developed a complete line of polyphase electric motors and of arc welding machines in which there was not a single casting. All parts ordinarily made of castings were built up of structural steel sections by means of welding. They had come to the conclusion that castings could be replaced by welded steel parts in many other branches of industry, and the chief question was how the parts should be designed to best advantage. The older engineers naturally had fixed ideas that certain machine parts should be made of castings, and it was rather difficult to get them away from these, he said.

Among the advantages of welded-up steel parts was that no patterns were required, and that the inventory of raw materials on hand could be reduced by 90 per cent, as standard steel sections were used. Even on the electrical machines, which even previously consisted only in small part of castings (containing much sheet metal and copper) the saving due to the substitution of welded steel for castings was as high as 20 per cent, in spite of the fact that the labor cost is greater with welded steel.

The speaker said he had no doubt that Diesel engines, for instance, could be built much lighter and cheaper of steel parts welded up than when made of cast iron, as at present, and that the redesign of the common engine lathe in such a manner that the wearing parts could be readily replaced offered great opportunities.

#### \$17,500 for Best Papers

The Lincoln Arc Welding prizes of \$10,000, \$5,000 and \$2,500, will be awarded to the authors of the most valuable papers suggesting improvements in the art of arc-welding, new and wider applications of the process, improved methods of testing welds to insure their integrity, or indicating advantages and economies to be gained by use of the welding process.

The competition is open to all, and all papers (in duplicate) should be sent to Calvin W. Rice, secretary of the American Society of Mechanical Engineers, 29 West 39th Street, New York, before Jan. 1, 1928. The papers must be accompanied by any drawings, photographs or models that may be needed to make the suggestions fully clear, and the utility of the suggestions must be fully developed.

The papers will be judged by a committee of the American Society of Mechanical Engineers, and the Society will acquire the right to them for publication in its periodicals. The Council of the A. S. M. E. may withhold all prizes if it does not deem any of the

papers submitted sufficiently worthy. It is expected to make announcement of the awards at the Spring Meeting of the Society in 1928. A pamphlet concerning the prize competition and which also contains suggestions made by the Lincoln Electric Co. has been published by the American Society of Mechanical Engineers and copies can be had by writing for them.

A member who is connected with one of the large electrical companies gave an illustration of the slowness with which the engineering practices of large companies change. He said it had been suggested that the head plates of the generators made by his concern be welded, instead of being bolted, but the suggestion met with stiff opposition from the engineer in charge of the work. He objected that the absence of the bolt heads suggested at once the lack of proper strength, and the welding engineer finally suggested that he would have bolt heads painted on, to overcome this objection based upon their psychological effect, and then have comparative tests made of the strength of bolted and welded joints. The younger generation of engineers now coming into the field will be more familiar with welding, and under them welding will have a better chance. E. H. Ewertz, who presided at the meeting, said that after all it would be a means of causing engineers to stop and think what they wanted to accomplish.

#### Thermit Welding Process

J. H. Deppeler, chief engineer of the Thermit Department of the Metal and Thermit Corp., spoke on new developments in the application of the Thermit welding process. One application described by him consisted in the fabrication of multi-throw engine crankshafts from round steel members. The main journals and crankpins consisted of short lengths of round steel and the arms were made entirely of Thermit metal poured into molds into which the round pieces were set. This process, of course, is applicable only if a small number of shafts are wanted, and another limitation is that the stroke must be comparatively short, so that the sections of medium carbon round steel abut partly, as the thermit steel, which contains only a small percentage of carbon, is of less strength.

C. J. Hol slag, of the Electric Arc Cutting and Welding Co., spoke on the application of arc welding to the construction of steel frames for residential and other buildings, and also mentioned the use of arc welding in building up the frames of trailers for transporting complete automobiles from Detroit to New York over the public roads. Each trailer carries three or four complete automobiles, and since high speeds are maintained the strains on the welded frames are very great.

H. W. Tobey, of the Pittsfield Works of the General Electric Co., said it was sometimes advisable to slightly alter the design to permit of the more advantageous use of welding. In the production of transformer core plates by his company, which plates are of L-shape, the individual sheets are first welded end to end to form a continuous ribbon, from which the plates are punched. This greatly reduces the amount of scrap and results in a material economy. The welding machine by which individual sheets are welded end to end is directly in line with the presses by which the plates are punched out.

In a paper by J. R. Dawson, of the Union Carbon and Carbide Research Laboratories, forming a contribution to the symposium on research developments

of the last three years, it was pointed out that the welding rod originally used for steel consisted of soft iron, so-called Norway iron, which had a tensile strength of only 47,000 to 52,000 lb. p. sq. in. Steel welding rod had now been developed which ranges from 58,000 to 63,000 lb. p. sq. in. in tensile strength, while for aircraft structures chrome molybdenum steel rod is used which, when heat-treated, shows a tensile strength of over 100,000 lb. p. sq. in.

A representative of a concern making furniture of duralumin extruded sections and sheet, said they had had some difficulty with cracks in the joints. This has been overcome by the use of a welding rod consisting of 95 per cent of aluminum and 5 per cent of silicon. This alloy had a temperature of solidification somewhat lower than that of aluminum, hence the weld metal would remain liquid longer and fill the weld as the welded members contracted on cooling.

The question of welding stainless steels was brought up and information was asked for. D. H. Deyo said the subject could not be handled categorically as there were all kinds of stainless alloys. His firm had succeeded in welding practically all of them with rod sim-

ilar in composition to the alloy itself. Information was asked also regarding the welding of duralumin, and S. W. Miller pointed out that the question was not whether duralumin could be welded, but what strength could be expected in the weld—something like the 70,000 lb. per sq. in. of heat-treated duralumin, or only the 22,000 lb. p. sq. in. of aluminum? Little information was forthcoming on this point, but one member, who said his experience had been mainly with the 51 S alloy of the Aluminum Co. of America, claimed he obtained about 75 per cent of the strength of the base material in the weld.

A. M. Candy, of the Westinghouse Electric & Mfg. Co., said his company had made some tests on the endurance strength of welded shafts. They obtained an endurance limit of 27,000 lb. p. sq. in. with the weld as made. If the weld was cold-worked by means of an air-operated hammer the endurance limit was increased to 34,000 lb. p. sq. in. or by about 25 per cent. Heat treating the weld without the cold working improved the metal only 10 per cent, whereas heat treatment after the cold working by air hammer gave a further improvement of 5 per cent.

## Carburetor Metering Jet Calibration

SOME tests with the object of developing a means of calibrating carburetor metering jets suitable for adoption as standard for the Air Corps are described in Air Corps Information Circular No. 569, by Opie Chenoweth.

It has long been known to be impractical to check carburetor jets by means of plug gages, because of the small sizes and because burrs and other imperfections affect the delivery, so that the diameter is not an accurate index of the flowing capacity. Fuel

metering jets drilled by the same nominal size drill will not give the same fuel flow when fitted into a carburetor, and the logical method of obtaining jets of equal flowing capacity is to calibrate them on a suitable apparatus.

There are three methods of flowing that may be used, as follows:

1. Noting the down-stream head on a standard orifice with constant upstream head and with the jet flowing from the down-stream side.

2. Measuring the quantity that flows in unit time under a constant head.

3. Flowing a given volume from a tank (variable head) and noting the time required for efflux.

Of the above the second method seemed to be the best, as the only careful measurement that has to be made in building the apparatus is a measurement of the head on the jet.

The conclusion arrived at from the tests is that a 50 cm. constant head submerged flow apparatus, using domestic aviation gasoline as a flowing medium and measuring the flow in cubic centimeters per minute, is satisfactory for the calibration of Stromberg main jets and for Zenith main jets, compensating jets and orifice plates. It is recommended that this type of flowing device and these methods be adopted as a standard by the Army Air Corps, the Naval Air Service, and by all manufacturers of aircraft carburetors, and used at the air intermediate depots for checking all jets that are to go into service.

An illustration of the flowing device in diagrammatic form is shown herewith.

The method of making the flowing tests is as follows: The flow from the main supply tank is so controlled by the regulating valve that a stream overflows the weir. For convenience the main flow valve is opened to fill the submersion tank. The jet to be calibrated is screwed into the adapter and the adapter mounted in place on the lower end of the flow valve. The submersion tank is then raised to the flowing position and the flow valve turned on. After flow has continued a sufficient time for the surface of the tank to become calm, the observations are made.

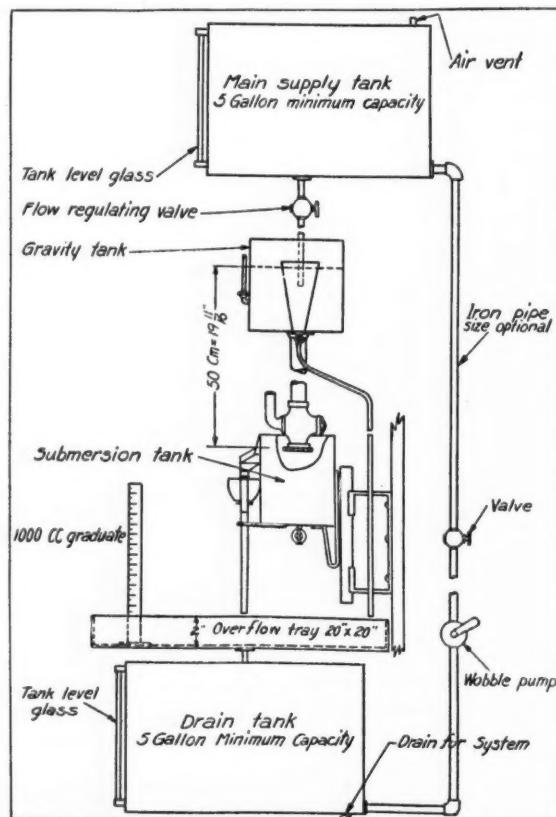
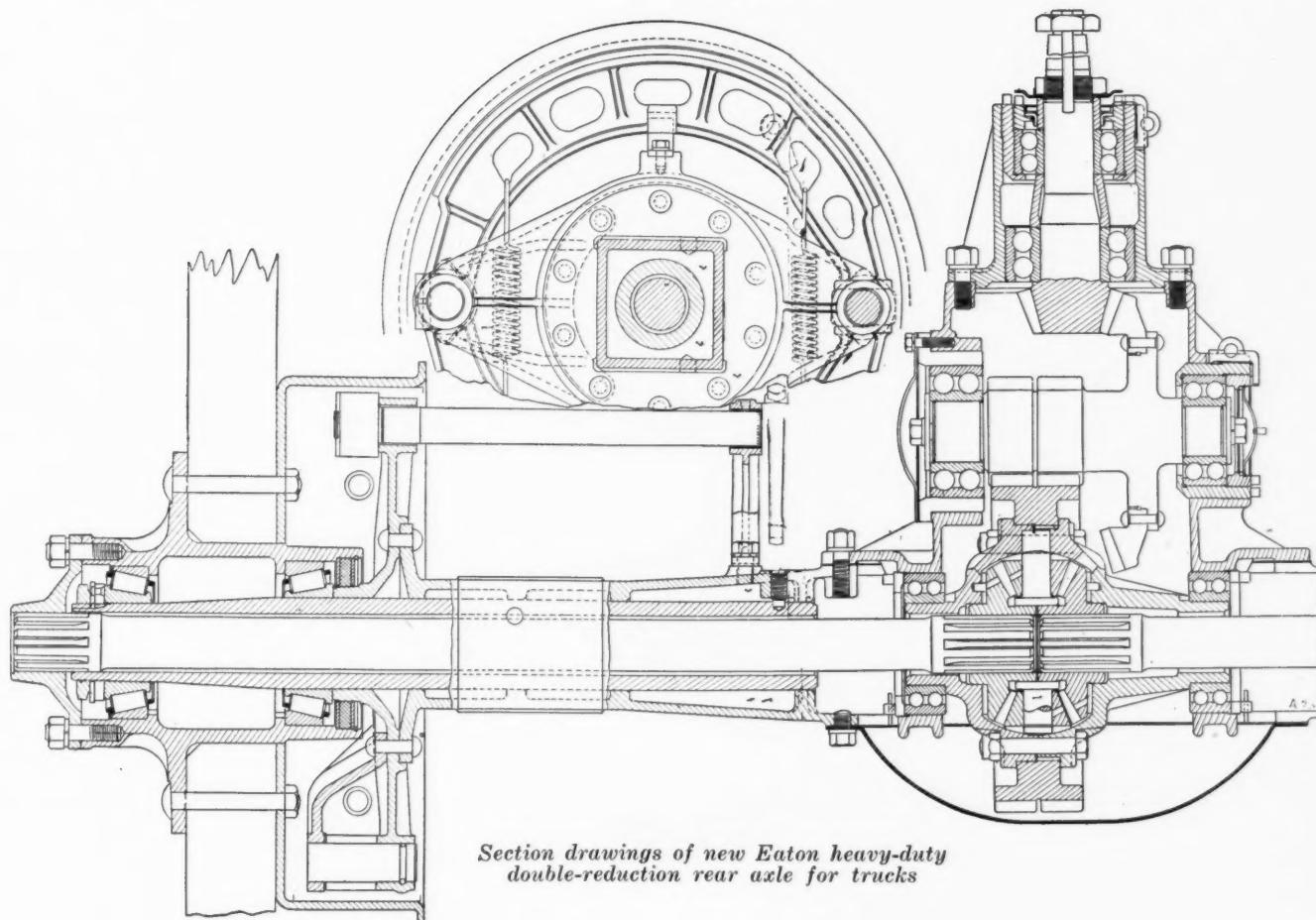


Diagram of 50 cm. constant head jet flowing apparatus



## Eaton Develops New Heavy-Duty Truck Axles

Spring capacity ratings are 10,000, 14,000 and 22,000 lb. respectively. One-piece cast housings and ground pinion carriers are features. Adjustment easy.

**H**EAVY-DUTY, double-reduction truck rear axles in three sizes have recently been placed on the market by the Eaton Axle Co. of Cleveland, Ohio. They are designated as models 41,000, 65,000 and 100,000 and are designed for spring capacity ratings of 10,000, 14,000 and 22,000 lb. respectively. Features of these axles are one-piece cast housings, ground pinion carriers and differential and counter-shaft bearing housings. Simplicity of adjustment, milled threads on all adjusters, and herringbone gears on the final reduction are further features.

### Bevel Pinion and Gear

Power is transmitted first through a bevel pinion and gear. The latter is mounted on the countershaft carrying the herringbone pinion. This pinion is integral with the countershaft, while the bevel gear is riveted to an integral flange on the shaft. The drive, however, is taken through internal gear teeth, so as not to strain the rivets.

Meshing with the herringbone pinion is the herring-

bone gear, which is mounted on the differential housing, the differential gears being completely inclosed within the herringbone gear. A feature of the design of this gear is that it turns with the wheels in such a manner that the teeth act as troughs, elevating oil and insuring thorough lubrication. Conventional design is followed in the differential, which is of the four-pinion type. Through the differential side gears, power is transmitted to the splined axle shafts, the pressed-on driving plate at the outer end having the hub plate bolted to it.

Five per cent nickel steel (S. A. E. No. 2512) is used for the first reduction pinions, and 3½ per cent nickel steel (No. 2315) for other gears, all gears being double heat-treated. The forged differential case is also heat-treated, and provided with hardened and ground thrust washers to take the thrust of the differential side gears. A Heald No. 50 Internal grinder is used for grinding the differential counter-shaft and pinion carrier bearing housings, while all threads in the pinion housing and differential as well

as on adjusters are cut on a Hall planetary thread mill.

Inserted in the axle shaft housing is a chrome nickel steel ground and heat-treated tube, supported at four points within the housing. The full-floating ten-splined axle shafts are of molybdenum steel. These are 2, 2½ and 2¾ in. in diameter respectively, for the three models.

Pinion, countershaft and differential are all mounted on double-row Fafnir ball bearings, while two sets of Timken roller bearings are used at the wheel ends, carried on the axle housing reinforcing tube. Brakes are of the internal expanding two-shoe type, cam-operated, and completely inclosed. A single set of brakes is used on each type of axle. Drum diameters are 17, 20 and 24 in., respectively, all drums being 5 in. wide.

Adjustment of the axles is rather simple, which is due to the use of herringbone gears. An inspection plate is provided on the axle housing. To adjust the differential and gears it is necessary only to loosen the adjusters on both sides, drive the axle, let the herringbone gears find their own center and tighten the adjusters. With this type of gear there

is no side thrust on the ball bearings, and greater tooth contact surface, and more quiet action are among the features.

Adjustment for the first reduction pinion is provided for on the propeller shaft end of the housing, while a single adjuster on the side of the differential housing takes care of the bevel gear.

The differential carrier assembly is inserted from the rear, this method of construction giving rather good road-clearances. When using 36-in tires on the Model 41,000, this clearance is 11¼ in. while with 40 in. tires on the Models 65,000 and 100,000 it is 12 and 11½ in. respectively.

No options are available in respect to the herringbone gear ratios but a choice of several ratios in the bevel gear set is offered. These range from 8.85 to 7.5 for the Model 41,000, and from 8.4 to 10.5 for the Model 65,000.

Range of spring centers available on these axles are 38¾ to 41¼ in. for Model 41,000; 42¼ in to 44½ in. for Model 65,000, and 44½ to 46 in. for Model 100,000, with treads of 61¾ in. on the 41,000, and 67¾ and 70 in., respectively, on the 14,000 and 22,000 lb. axles. All axles are designed for Hotchkiss drive.

## Women Eligible for Aeronautic Competitions

ONE question that came before the last meeting of the International Aeronautic Federation was that of distance records. M. Tissandier of France demanded that in the case of flights in a straight line, the landing points be accurately determined. The subject was referred to the technical committee.

The representative from Holland demanded that the carnets or passes which entitle pilots of civil airplanes to fly from one country into another, be extended in scope so as to be applicable also to air ambulances. It was pointed out that this was a legal question with which the F. A. I. could not concern itself; that it was a matter within the jurisdiction of the International Committee on Aerial Navigation. It was therefore decided to request that committee to extend the carnet so as to apply also to air ambulances.

An understanding of the Federation with the International Association of Recognized Automobile Clubs having been ratified, Col. O'Gorman (Great Britain) proposed that a similar understanding be arrived at with the international body representing motorcycling, while M. Tissandier suggested an alliance with all international bodies representing a "mechanical sport."

It was proposed that on flying maps lines of high tension electric distribution should be indicated. Col. O'Gorman pointed out that it would be exceedingly difficult to keep such maps up to date, and made a counter-proposal to the effect that such maps should be prepared by local clubs and furnished by them to pilots when making flights in their territory.

On the motion of the British representative it was decided that women pilots should be allowed to enter aeronautic competitions hereafter.

The Spanish delegate asked that a special pilot's certificate be established for the so-called "autogiro," a helicopter-like machine of Spanish invention. The Brazilian delegate demanded that the Federation interest itself in the creation of floating landing platforms in the Atlantic, and there was also a demand

that the distance record established by the Norge in flying across the North Pole be ratified.

Three resolutions were presented by the French delegation. The first was to the effect that parachutes must be carried on all planes engaged in record attempts, except for pure speed; the parachutes must weigh at least 22 lb. and their weight is not to be included in the useful load transported. The second proposal was to make it obligatory to carry oxygen respirators when making attempts for altitude records above 16,500 ft. As Great Britain is not interested in such records the British delegation refrained from voting on it, but the proposition was adopted. The third proposition was that a minimum useful load of 500 kg. (1102 lb.) must be carried in attempts at altitude records above 6560 ft. with useful load.

At the proposal of Great Britain it was decided that the Schneider Cup should be competed for only once every two years. The American delegates desired the record for the greatest distance flown in a hydroplane, 3202 km., affirmed, but after discussion the figure was placed at 2963 km. A final act consisted in the admission of the German Aero Club to the International Federation.

The Federation recently has occupied itself with the problem of certificates for international flights, and the charting of aviation fields. As regards aerial records, it was stated that 35 were held in France, 14 in the United States, 10 in Italy and 3 in Germany.

A resolution was moved by the representative of the Aero Club of Austria calling for the organization of an international air rally. It was pointed out by several delegates that the Federation never occupies itself with the organization of competitions, and the proposal was dropped. A second proposal from Austria was in regard to the setting of a landing speed limit for record trials. A third proposal from the same source was that some pressure should be brought to bear on the press not to give too much publicity to aerial accidents, and to make proper distinction between civil and military aviation.

# Just Among Ourselves

## What Price Stock Car Racing?

LOOKS as though there was going to be some stock car racing this year, whatever anybody's opinion may be. Looked at from a purely factory standpoint, we must admit that we see little to commend revival of this form of publicity. To begin with, even if the problem of "What is a stock car?" be satisfactorily answered, it would seem obvious that many factors having nothing whatever to do with the stock value of a car might cause it to make a poor showing in a race. Any one of a number of small troubles may develop in any automobile during a speed test and yet be no discredit to the vehicle as a stock car in any way. Moreover, only one car can win each race. For the winning manufacturer, in each case, of course, there will be a certain amount of favorable publicity among that section of the public which can be influenced by feats of this sort. But for one winning car, there must be several losing ones which stand likely to get considerable unfavorable publicity. And no one manufacturer can expect to win all the time.

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## Will Manufacturers Risk Their Reputations?

THE argument that if the manufacturers don't back the stock car races, entries will be accepted from owners and that discredit may thus be brought on a particular make doesn't appeal to us as being very strong. From a purely marketing viewpoint, the average factory would seem to have more possibilities of losing than of winning by backing the revival of stock car racing. The lure of possible temporary

advantage may take a number of makers into the arena, but for those vehicle builders who have made a reputation for building sound, competent products over a period of years to risk that reputation on the vagaries of track racing hardly seems logical. These ideas of ours may be wrong, of course, but they seem thoroughly sound to us at the present writing.

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## Tires That Harmonize With Body Colors

ALWAYS something new; that's what makes the automobile business so fascinating for many of us. Now we have the custom-built tire with special color sidewalls to harmonize with the colors of the car. How far this development will go is hard to tell, but one of the smaller tire manufacturers is advertising it extensively and it is an idea that might, in this day of jazz color treatment and keen sales competition, appeal to some car builders, as well as to individual owners. Many owners now keep their tires painted white for the sake of a different effect. The use of a color which harmonizes with the color of the car body would, it seems to us, give a less bizarre and more pleasing effect than the white in most cases.

\* \* \*

## Safety of Private Proving Grounds

WE'VE heard a lot about proving grounds for a few years back, but never were struck with the great safety value of such test areas until we heard some figures given by O. T. Kreusser at a Metropolitan Section S.A.E. meeting recently. At the General Motors proving

ground, Kreusser said, 7,000,000 miles have been operated without any accidents requiring more than first aid attention. This sounds like an unusually fine record and almost certainly is superior from a safety standpoint from what probably could have been made in road testing. Kreusser pointed out also that 25,000 miles a month of testing on a car can be turned up at the proving grounds which, he says, would take three months on the highways. When the proving ground originally was designed, he stated, it was expected that 500,000 miles a year would be turned up; in the month of March, 1927, alone, however, 509,000 miles were turned up.

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## "Butter and Egg" Car Salesmen

WHILE gazing at the typewriter wondering just what to write about, a voice making one end of a telephone conversation came wafting to us over the office partition saying something like this: "And, for heaven's sake, does he want me to come down to his office for that? No, I haven't bought one, but I'm just about to do so. And when I do buy I'm going to buy from one of the salesmen that has been out here hounding me, not from a bird that writes me a note to call at his office. You won't sell many — cars on that basis. That salesman ought to go out and get a butter and egg route somewhere . . ." How many of us without moving from our office chair still can hear true, yet almost unbelievable tales, of how automobiles are not sold. Truly the current emphasis which factories are placing on education and training of retail salesmen is effort applied in the right place.—N. G. S.

# Need for Reliability Discussed at Aeronautic Meeting

*Airplane design and construction analyzed from various angles  
at joint meeting of S.A.E. and A.S.M.E. at Buffalo.  
Too much standardization is opposed.*

By A. F. Denham

NEED for greater reliability in airplane design was the principal point discussed at the first annual meeting of the aeronautic division of the American Society of Mechanical Engineers, held jointly with the Buffalo Section of the Society of Automotive Engineers at Buffalo, N. Y., April 25 and 26. The consensus was that the time for complete standardization in aircraft design has not arrived and that it is up to the industry to convince the public of the reliability which can be achieved with more advanced designs of airplanes and powerplants before aviation can take its rightful place in freight and passenger transport.

Five papers were presented at the two technical sessions. First on the program was a paper by Anthony H. G. Fokker, president of the Atlantic Aircraft Co., on the subject of "Transport Airplanes."

Following this paper, Harry F. Guggenheim, president of the Daniel Guggenheim Fund for the Promotion of Aeronautics, carried the discussion of airplane reliability into the aerodynamic field, stressing the important relations between safety (from a purely aerodynamic angle) and acceptance of aviation by the public.

The opening paper of the second technical session, presented by V. E. Clark, vice-president of the Consolidated Aircraft Corp., dealt with present characteristics in airplane design, pointing out that greater diversity exists in tendencies in aircraft construction

between various nations than among constructors of any one nation. Following this paper, Bishop Clements, metallurgist of the Curtiss Aeroplane & Motor Corp., discussed the metallurgy of aircraft engines.

The last paper of this session had for its title "Municipal Airports, Their Construction and Operation," Maj. John M. Satterfield, the author, confining himself chiefly to the design of the Buffalo million-dollar airport.

A banquet was held on Monday evening, with Elmer A. Sperry, president of the Sperry Gyroscope Co., and William P. MacCracken, Assistant Secretary of Commerce for Aviation, as the principal speakers. Mr. Sperry chose as his topic the "Necessity of Developing a Heavy Fuel Oil Aero-Engine," basing his conclusions chiefly on the greater reliability and safety from fire hazard which can be obtained with this type of engine. Mr. MacCracken discussed commercial aviation in general, stating that it is imperative for airplanes to develop passenger and freight traffic in addition to mail in order to place them on a profit paying basis.

Following are brief summaries of the various papers and addresses:

In comparing single-engined and multi-engined airplanes from a reliability angle in addition to their economic value, Mr. Fokker pointed out that payload decreases when two engines are used rather than one. From there on an increase in the number of engines

## New Buffalo Airport



*View of first buildings at the Buffalo Airport. In the center is the Administration Building controlling a view of three-quarters of the field. Hangars will be built in back of this and to the right. One of the cinder runways is in the immediate foreground*

means a gradual increase in payload. Using a number of engines geared to a single propeller is not practicable at present, but as sizes of airplanes increase such a development is advisable, enabling engines to be placed where they are accessible in flight and can be repaired. Another advantage gained would be the elimination of drag due to idle propellers. Larger engines or engine units geared to a single shaft should be developed.

Airplanes of the future will be entirely built of metal. Cost is a big factor at present. Covering with dural presents difficulties. If flat sheets are used drum head vibration is set up. If sheets are corrugated they are more difficult to rivet.

Fire hazards can be reduced by greater attention to the danger of bursting fuel tanks and leaking fuel lines, which are the chief causes. Airplanes of the future should be operated much like submarines—from an instrument panel.

Mr. Guggenheim, after summarizing briefly various developments such as the Hill tailless plane, the LaCieva autogiro, and the Handley-Page-cum-Lachman slotted wings as contributions toward the achievement of greater aerodynamic safety, presented the major points of the Guggenheim Safe-Aircraft Competition.

The object of the competition is to achieve an advance in safety of flying through improvement of aerodynamic characteristics of heavier-than-air craft. Every aircraft entered must demonstrate its ability to meet all qualifying requirements, before it is declared eligible to enter the competition. First prize is \$100,000. The first five aircraft meeting all qualifying requirements will receive \$10,000 each. Summarizing, aircraft must meet with the following:

Powerplants must have been submitted to type tests; must have mechanical or electric starter.

Structural strength must be in accord with Department of Commerce requirements.

Full throttle speed: 110 m.p.h. minimum.

Climb: (at 1000 ft.) 400 ft. per min. minimum.

Useful load: Minimum, 5 lb. per hp., including pilot, observer, fuel and oil.

Duration: Three hours at full throttle and normal r.p.m.

Instruments: Usual powerplant instruments, altimeter and air speed indicator.

Adequate accommodation for pilot and observer, and 1 cu. ft. of cargo space for every 10 lb. of pay load.

Safety tests and demonstrations will include the following requirements:

Minimum speed: 35 m.p.h.

Gliding speed: 38 m.p.h. for three minutes, power off.

Landing run: 100 ft. maximum, power off.

Confined space landing: Glide over an obstruction 35 ft. high, stopping not more than 300 ft. from base of obstruction.

Take-off: Maximum run 300 ft., clearing 35 ft. obstruction 500 ft. away.

Gliding angle: (Power off) minimum glide not more than 8 deg., steepest glide not less than 16 deg. to horizontal, latter at not more than 45 m.p.h.

Stability: Must be capable of flying in gusty air at any speed from 45 to 100 m.p.h. with controls free. If controls are released airplane must return from any position to steady flight. If engine fails, plane must take up steady gliding attitude from any position. From a dive plane must return to steady gliding attitude with controls released.

Controllability: Control must be effective at all speeds and attitudes. Each control must be effective with others free.

Maneuverability in restricted territory: Landing must be effected in plot 500 by 500 ft. surrounded by 25-ft. high obstruction. Must be able

to taxi in any direction with a wind of not less than 20 m.p.h.

In the competition proper points will be awarded for the following:

(a) Level flights: 2 points for every mile less than 35 m.p.h.—10 points.

(b) Glide: 4 points for every mile less than 38 m.p.h. (3 min.)—24 points.

(c) Speed: 1 point for every mile in excess of 110 m.p.h. Applicable only if 24 points are scored in (a) and (b)—10 points.

Landing run: 2 points for every 3 ft. less than 100 ft.—40 points.

Confined space landing: 1 point for every 2 ft. less than 300 ft. from base of 35-ft. obstruction—75 points.

Take-off: 1 point for every 15 ft. less than 300-ft. run—15 points.

1 point for every 10 ft. less than 500 ft. to clear 35-ft. obstruction—26 points.

Mr. Clark said that airplane design at present is scattering in all directions. Diversity in design is greater between nations than between constructors of any one nation. One influence is availability of raw materials. The United States is fortunate in having available practically every element needed.

Great Britain is the most conservative of big powers in aerodynamic design. Bi-planes predominate. Most of their construction is of wood with sheet steel fittings. Welding is discouraged and but little duralumin is used.

France has diversified ideas. Many modern ships are sesqui-planes. Monoplanes also widely used. Characteristics of French planes are very small travel of shock absorbers, tendency to attach important structural members to undercarriage, and general lightness—even flimsiness. Stamped sheet metal is used by the S.E.C.M., with special machinery for quantity production. Wooden fuselages and metal wings are used largely.

German designs are different in that they are not derivatives of military ships but are designed primarily for commercial use. Monoplanes and stressed duralumin covering are favored.

Holland, as represented by the Fokker company, uses cantilever wings of wood with steel tube fuselages, the forward fuselage portion being a Warren and the rear a Pratt truss.

The United States builds military bi-planes, usually externally braced, sesqui-plane pursuit ships and monoplane commercial transports. Air mail service is the most outstanding achievement.

As to powerplants, the air-cooled engine is gaining. The inverted V-type has proved practical; the Schneider Cup Fiat engine developed 900 hp. with 900 lb., excluding water.

Mr. Clements, discussing engine construction in this country, said that standard S.A.E. materials are used almost exclusively, as follows:

Crankshafts and connecting rods: Nos. 2340, 3340, 3240, 3140, 6140.

Gears: Nos. 3130, 3335, 3250 or 3312.

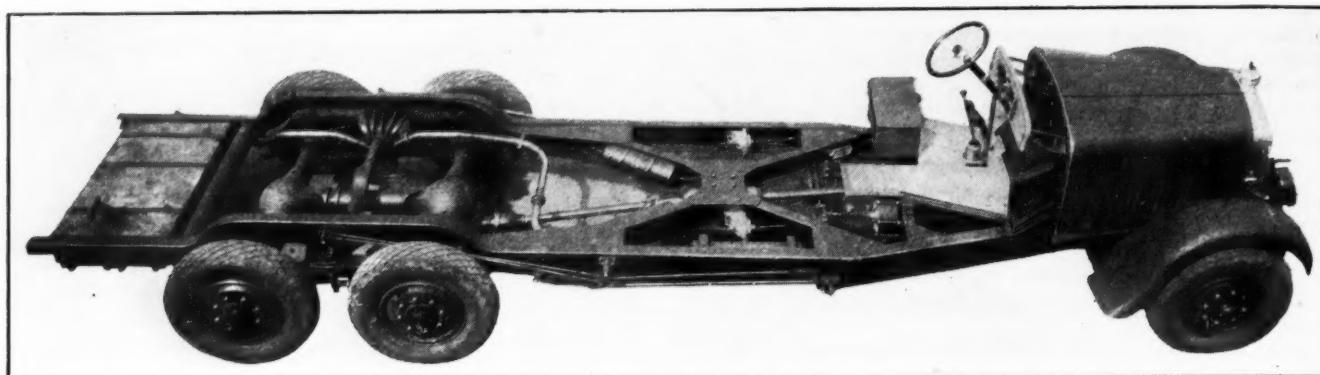
Bolts and Studs: Nos. 2330 and 3130.

Nuts: Nos. 1025, 1035, 3130, 2330.

Ordinary bronzes and brasses are used. Valve seats, however, are 10 per cent Al, 90 per cent Cu, or 5 per cent Ni, 5 per cent Fe, 10 per cent Al, 80 per cent Cu. The latter is used mostly for inserts.

Duralumin is used where high tensile strength and modulus of elasticity is not required, and dural forgings are being used.

Cylinder heads, water jackets and crankcases are largely of 3½ per cent Cu, 96½ per cent Al. Pistons are often of 3½ per cent Cu, 2 per cent Ni, 1½ per cent Mg, 93 per cent Al.



*Improved Safeway Six Wheel bus chassis showing 70-gal. fuel tank, battery box and rods of dual braking system*

## Six Wheel Braking System Changed

*Two separate systems now employed on the four drive wheels.  
Duralumin replaces aluminum in crankcase.*

A NUMBER of changes have been made on the Safeway bus chassis being manufactured by The Six Wheel Co., Philadelphia, Pa., for the purpose of making it easier to control and to facilitate servicing.

Possibly the most important change is in the braking system. Two entirely separate systems are now employed on the four drive wheels. The service brake is operated either by Westinghouse air system or Bragg-Kliesrath Booster, while the emergency brake is operated by a separate B-K booster system.

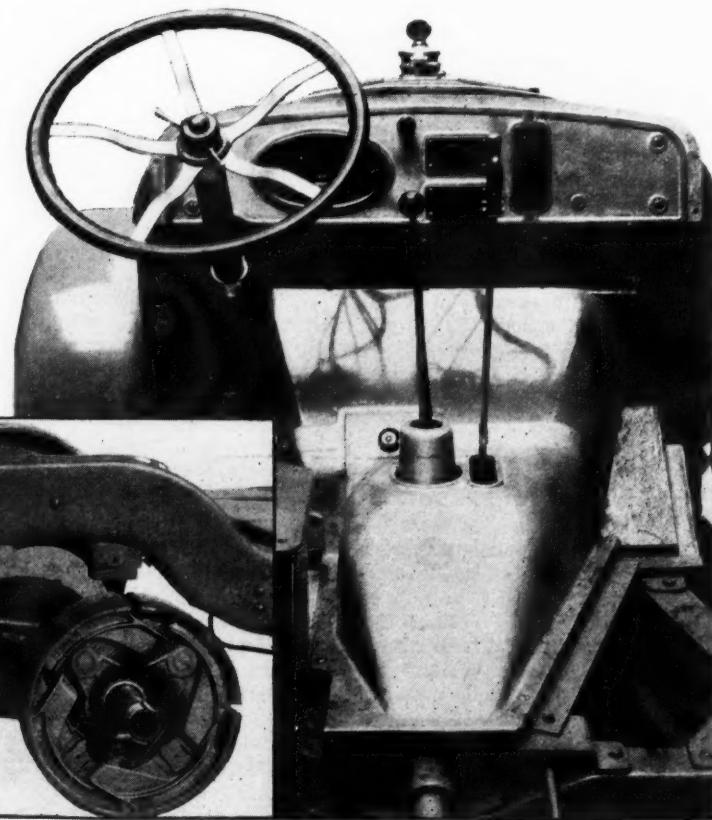
Each system operates two independent brake shoes on each of the four drive wheels and comprises 530 sq. in. of braking area, so that in the combined systems there are 16 brake shoes with 1060 sq. in. of braking area. All hinge pins and wearing parts of the brake assembly are lubricated through magazine oilers which hold enough lubricant to oil the mechanism for about 3000 miles.

Aluminum floor boards are now being used, with cast aluminum transmission cover and a cast aluminum instrument board in which all instruments are grouped under glass after the practice now commonly followed by passenger car designers.

The battery is now located in a metal box which

furnishes a permanent support for the driver's seat. Duralumin has been substituted for aluminum in the crankcase construction to gain greater strength without sacrifice of weight. Crankshafts are counterbalanced and vibration dampers and ventilated clutches are now standard.

A 70-gal. fuel tank is hung on spring trunnions at the rear of the chassis in such a way as to insulate against road shocks.



*Detail of dual brake system of Six Wheel bus chassis. Note magazine oilers for automatic lubrication of wearing parts*

*Aluminum panel and instrument board with grouped-under-glass instruments and cast aluminum transmission cover on the Six Wheel chassis*

# Export Sales Outlook is Good in Most Markets

*American automotive products moving satisfactorily in principal foreign countries. Japan, China and Denmark are showing greatest weakness.*

**O**N the basis of a survey just concluded by the Automotive Division, Bureau of Foreign and Domestic Commerce, automotive market conditions in the world at large outside of the United States may be described as "Fair" at the present time.

Of the 25 countries reported on by Department of Commerce representatives, six were listed as good outlets for automotive products during the first three months of the year, 13 produced a fair amount of business, while six were labeled as poor.

As regards the outlook for the second quarter—April, May and June—10 of the 25 countries were rated as having good prospects for increased sales, six promised a fair volume of business and three were definitely in the doldrums. Information on which to base second quarter predictions was lacking in six cases.

The three countries considered as poor markets at the present time are Denmark, China and Japan. Unsettled political conditions have interferred with sales in China, while the financial panic in Japan is expected to act as an effective brake on all business in that country for some time to come. The economic and financial situation in Denmark was quite unfavorable during the first quarter and little hope of immediate improvement is entertained. What business is transacted reveals a trend toward closed models and small sixes. Small four-cylinder cars, however, still account for the bulk of sales. Purchases of open cars are becoming fewer. American manufacturers are meeting with keen competition from European makes, particularly the French. Italian and English competition, Fiat and Morris, also remains fairly active, while German cars seem to be making strong efforts to get back in the Danish market. The truck and bus market remains very dull, owing to the continued business depression.

## Fair Business Expected

Fair business in automotive lines during the second quarter was expected to develop in Belgium, Brazil, France, Peru, Philippine Islands and Sweden.

During the first quarter Belgium was passing through the tail-end of the bad slump which materialized last year. American imports dropped well under one-third of the business usually done, while the French and Italian trade suffered similarly. Present indications are that the slump is approaching an end. In fact, importers and dealers state that a return to favorable conditions may be fully expected during the second quarter.

The first quarter of 1927 witnessed a considerable increase in sales of all automotive products in Brazil as compared with previous months. However, despite the increased number of sales, practically all dealers considered the period as having fallen short of expectations. This was probably due to important increases in prices of every car in the local market. While the second quarter of the year is not considered as good as the first general business conditions appear to be better than they were a year ago, and prospects are that conditions will prove to be about normal.

The French automobile market is improving for domestic makes after widespread price reductions. Sales of American cars are slow, but future prospects appear fair unless high tariff rates are imposed.

## Improvement in Peru

January was rather a dull month in Peru which was a natural reaction after the Christmas holiday season, but February witnessed considerable improvement. Business in March was maintained at the approximate level of February. Competition has entered in the form of English Morris cars, but it is understood that these cars have not held up under the poor road conditions as well as was expected.

Importations of motorcycles are continuing without diminution, in spite of the greatly increased import duties. Parts and accessories seem to be less influenced by the general economic depression than is the case with most lines. Dealers look for some improvement in automotive sales during the second quarter. The potential market for automotive products in Peru is constantly increasing.

The automotive market during the first quarter of 1927 in the Philippine Islands improved somewhat over the preceding quarter. There was a decided improvement in the movement of light cars and trucks but this was not as noticeable in the medium-priced class. High-priced cars and heavy truck sales were slow. An increased preference for closed models in Manila is noticeable, but sales of open cars are normal in the provinces. Considerable competition is being experienced from Fiat cars which were introduced into this market during the first quarter. Prospects for the current quarter are not particularly bright due to the rainy season.

Very mild weather during January and February resulted in a good level of sales of automotive products in middle and southern Sweden. In northern Sweden, however, the seasonal slackness was somewhat more

pronounced, with the result that total sales for the quarter showed a decrease as compared with the same period of 1926. Competitive factors in the automotive field, in which American cars predominate, remain unchanged. A new competitor, which certain American manufacturers will have to face, is the new Swedish Volvo car. The touring models of this make were expected to be ready for delivery in April, while the closed models will come out in June. There are signs of increasing competition in the parts and accessories field of the automotive market.

Good business in the second quarter is looked for in Australia, Canada, Dutch East Indies, Greece, India, Poland, Porto Rico, Rumania, Spain and also in the United Kingdom.

In the British automotive market the feeling of optimism which prevailed as the year opened has been justified, both from the manufacturing and sales points of view. January was a distinctively good month, though during February sales were slower, due to extremely bad weather. Offsetting the bad February, sales during March were greatly increased. Reports from manufacturing areas indicate steady production on the part of British manufacturers. Among imported cars, American automobiles ranked first in sales volume during the first quarter, with Citroen and Fiat producing keen competition. A recent reduction in the price of gasoline will have a beneficial influence on car sales. Altogether much optimism prevailed, both in the manufacturing and distributing fields at the close of the first quarter.

General prosperity in all of the Australian cities, with the exception of Queensland, increased the purchase of automotive products during the first quarter. Closed models are being given more prominence, and local body builders are giving special attention to the construction of closed cars. British companies are making a strong effort to absorb a great part of the Australian trade. Stocks of cars on hand appear to be adequate to meet the demand and there is no particular evidence of overstocking. The outlook for the second quarter is good with increased purchasing power made available by the general prosperity throughout the country, together with the Third Melbourne International Motor Show

to be opened early in May, which should account for an increase in sales.

Canadian business in general continues to be steady and satisfactory, and basically is better than it was a year ago. Mild weather in March stimulated trade materially, especially in automotive lines. Imports between December 1, 1926, and March 1, 1927, increased 82 per cent in quantity and 75 per cent in value over the same period a year ago, which indicates that Canadians are buying higher priced cars than they were last fall, and there was a spread of 42 per cent between quantity and value gains over the corresponding period of 1924-25. Estimated sales of motor vehicles during

the first quarter of 1927 are as follows: 17,500 passenger cars; 2500 trucks; 50 motorcycles, each class registering considerable increase over the first quarter of the previous year. Sales of British and foreign cars continue to be insignificant. Truck sales have been very satisfactory during the past few months. There has been a considerable increase in the sales of motorcycles over 1926. Parts and accessories have experienced considerable sales increase. Reduced taxes, improved economic conditions, and increased purchasing power bid fair to result in the establishment of new sales records during the second quarter.

The Cuban market is still somewhat depressed when compared with sales in 1926 and 1925. A slight gain in the first quarter was noticeable over the fourth quarter of 1926 in the sales of medium-priced cars. Sales of high-priced

### *Automotive Market Conditions in 25 Foreign Countries*

(Data From U. S. Department of Commerce)

Country	1st Quarter Sales	2nd Quarter Outlook
Australia	Good	Good
Austria	Fair	*____
Belgium	Poor	Fair
Brazil	Good	Fair
Canada	Good	Good
China	Poor	Poor
Cuba	Fair	*____
Czechoslovakia	Fair	*____
Denmark	Poor	Poor
Dutch East Indies	Fair	Good
Egypt	Fair	*____
France	Poor	Fair
Greece	Fair	Good
India	Fair	Good
Japan	Fair	Poor
Mexico	Poor	*____
Netherlands	Poor	*____
Peru	Fair	Fair
Philippines	Fair	Fair
Poland	Good	Good
Porto Rico	Fair	Good
Rumania	Good	Good
Spain	Fair	Good
Sweden	Fair	Fair
United Kingdom	Good	Good

\* Information Lacking

cars declined, as also did the sales of trucks. The market for heavy trucks continues to be very slow, but, since the signing of the contract for the construction of the central highway, considerable optimism for sales improvement has been expressed. While the market in accessories is not up to normal, slight improvement has been noticeable.

Due to the sound economic conditions existing in Java and Madura Islands, automotive sales in the Dutch East Indies have been very satisfactory. Sales of passenger cars, light trucks and motorcycles have been brisk, though sales of heavy trucks have been slow. Foreign competition appears to be decreasing. Dealers agree the outlook for the current quarter is excellent.

The Greeks are showing a well defined tendency to standardize on the medium and low-priced cars whose representation has been firmly established by time and experience in this market. The Cab Drivers Association still continues to constitute the most important source of automobile orders in Greece. The market for trucks has shown considerable improvement, and it is anticipated that it will improve further during the present quarter. The market for parts and accessories has been very active, and dealers generally express satisfaction with the amount of business done. The prospects for the future are encouraging.

Sales and stocks of automobiles in India were somewhat slow during January and February, awaiting new models and a probable reduction of import duty. The recent increase in import duty in Ceylon from 10 to 20 per cent is not affecting sales. There is a decided trend toward the medium-priced cars. There is an unusual demand for buses and trucks, while accessories are somewhat slow. British and Italian competition is increasing. The outlook for the second quarter is decidedly encouraging.

The continued improvement in the exchange value of the leu has increased the purchasing power of both consumers and dealers in Rumania and has been an important factor in the increase in the importation of automobiles. Competition to American cars is principally confined to the Fiat, Renault, and Citroen. It is estimated that from 70 to 75 per cent of all automotive sales are of American make. Imports of parts and accessories from the United States are continually increasing. Practically all local dealers carry fairly complete stocks of spare parts. A general feeling of optimism prevails among dealers in regard to sales during the coming quarter.

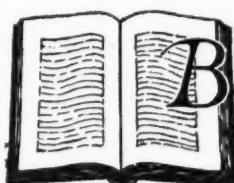
Due to the late arrival of new models and the steady appreciation of the peseta, which caused prospective

purchasers to await further price reductions following the rise in the exchange, sales of automotive products have been less active than in the fourth quarter of 1926. The prospects for the sale of American cars during the second quarter of 1927 is good with purchasers in urban districts increasing in number.

Sales during the first quarter of this year have increased approximately four times over the corresponding period of 1926. The principal drawback for American agents has been the lack of stocks of the higher-priced machines, which, in several cases, has resulted in the loss of sales to European competitors who had their cars ready for delivery. The Fiat continues to be the leading competitor among the European makes. The bus market was particularly active during this quarter, although most purchases were of low-priced chassis. Dealers are very optimistic concerning the second quarter, as this quarter is considered to be the best sales period of the year.

General business conditions in Porto Rico have been somewhat above the average. The gradual increase in the popularity of the closed car continues. Roadsters are seen in larger numbers than ever before. Medium and high-priced cars account for a large proportion of the total sales. Light colors predominate. Motorcycles seem to have lost somewhat in popularity since the advent of low-priced passenger cars.

The promulgation of the city ordinance, effective as of January, 1927, prohibiting the use of vehicles using iron or other metal ties in Mexico City, has resulted in abnormal sales of all kinds of trucks in Mexico, particularly the one and one-half ton models. Truck business in heavier models has been benefited to some extent by government purchasers. Mexico seems to be taking to the idea of standardizing trucks. In sharp contrast to the sales of trucks, sales of passenger cars have been extremely light, affecting all classes of cars.



## Books for the Business Bookshelf

### *Successful Men*

Tips on Leadership—Life Stories of Twenty-five Leaders.  
Herbert N. Casson. B. C. Forbes Publishing Co., New York.  
223 pp. \$2.

ANOTHER "Success" book! By following and benefiting by the experiences of some 25 so-called "leaders" such as Burbank, Carnegie, Edison, Ford, Newton, Watt and Westinghouse, the reader is expected to be able to capture the spark which has carried these men to their present high positions in the minds of mankind. That such a theory is questionable is evidenced by the great number of still mediocre persons who have spent countless hours in reading just such books as this. This particular volume is written in the sort of style that requires frequent use of italics and capitals.

### *Standardization Activities*

Standards Yearbook—1927. Compiled by The National Bureau of Standards, Department of Commerce. 408 pp. Illus. \$1.

THIS is the latest addition to the list of Government publications of interest to industry and is the first issue of a yearbook which will be brought out annually hereafter. As its title indicates, it is concerned with the standardization movement in this

country and the world, and in particular with the work of the Bureau of Standards in connection with the movement.

The book contains a comprehensive treatment of all world standardization activities, of the fundamental and working standards used in this country, of Federal standardizing agencies and of the work of the Bureau of Standards, as well as pertinent information about other phases of standardization activities.

### *An Employer on Wages*

The Economic Basis of Fair Wages. Jacob D. Cox, Jr. The Ronald Press Co., New York. 139 pp. \$3.50.

THIS book, written by the president of the Cleveland Twist Drill Co., is a very interesting philosophical discussion of the wage and price scales current in the United States. Although an employer, the author gives full consideration to the viewpoint of labor in the matter of wages, but his final conclusions, arrived at by analysis of economic facts rather than by his desires, are, of course, quite at variance with the aims of many labor readers. The book is short, more because of its conciseness than its lack of subject matter and it should be of considerable interest to all who have to do with wage and price setting.

# Tariff Reduction Hasn't Hurt Canadian Factories

Automobile production first three months of this year slightly ahead of same period in 1926, although imports almost doubled in number and value.

**J**UST a little over a year has gone by since Canada reduced its tariff on passenger cars and trucks. The dire effects on the Canadian factories predicted at that time by many observers do not seem to have come about.

Passenger car production in Canada for the first three months of this year exceeded that of the first quarter of 1926 by 2.6 per cent, although imports of vehicles into the country almost doubled both in number and value.

It was in the budget speech by the Canadian Minister of Finance in the House of Commons on April 15, 1926, it will be remembered, that the new schedules were presented, involving a general decrease in tariff on automobiles imported from the United States ranging on the average around 10 to 15 per cent. The new regulations took effect at once following the reading of that speech. Immediately thereafter the utter ruin of the Canadian automobile manufacturing industry was freely predicted by many opponents of the revisions and many logical - sounding arguments were pro-

pounded to back up that point of view. American makers for some little time were confused as to the actual effect the reduction might have, while those who had manufacturing and assembling plants across the border naturally were seriously concerned.

But immediately following the announcement of the new tariffs, a careful study of the entire situation revealed facts which indicated, even at that early date, that results for the Canadian automotive industry wouldn't be so bad as the more pessimistic claimed. On April 29, 1926, for example, just 10 days after the presentation of the budget speech, *Automotive Industries* pointed out that while "immediate losses undoubtedly will be suffered in certain respects by those manufacturers who have been operating Canadian factories . . . it begins to appear that their losses may not turn out to be so serious as was thought at first."

And subsequent events seem fairly well to have borne out that moderate view of the situation. While the Canadian industry has made no special production records thus far this year, it is holding up well to

Cumulative Production of Automobiles in Canada for First Three Months of 1926 and 1927  
(Dominion Bureau of Statistics)

Class	Number		Selling Value f.o.b. plant	
	1926	1927	1926	1927
<b>Passenger:</b>				
Open—				
2 to 3 passenger .....	2,228	1,649	\$ 1,198,569	\$ 836,459
4 to 5 passenger .....	19,528	11,500	9,442,946	5,285,027
7 passenger .....	461	484	568,737	499,535
Total open .....	22,217	13,633	11,210,252	6,621,041
Closed—				
2 to 3 passenger .....	3,896	4,340	2,650,707	2,582,294
4 to 5 passenger .....	13,822	22,796	12,146,113	17,482,758
7 passenger .....	332	369	750,262	744,697
Total closed .....	18,050	27,505	15,547,082	20,809,749
<b>Trucks:</b>				
Under 1 ton capacity .....	1,244	2,194	543,489	855,272
1 ton .....	5,627	4,189	2,459,261	1,606,275
Over 1 ton and under 5 tons .....	770	338	896,626	643,625
5 tons and over .....				
Total trucks .....	7,641	6,721	3,899,376	3,105,172
<b>Chassis:</b>				
Passenger .....	4,218	4,516	1,419,064	1,599,928
Freight .....	4,135	4,083	890,093	1,472,583
Either passenger or freight .....	384	190	201,487	133,664
Total chassis .....	8,737	8,789	2,510,644	3,206,175
<b>Taxicabs and buses (not included above) .....</b>				
	46	6	234,345	21,056
Total .....	56,691	56,654	\$33,401,699	\$33,763,173

the levels set in the first part of last year when the higher tariff barriers still were in effect. This performance is particularly creditable, of course, when the relatively slow progress of many United States' manufacturers during the same period is taken into consideration.

Total motor vehicle output in Canada for the first quarter of this year was 56,654 as against 56,691 for the first quarter of 1926, a better relative showing so far as units produced is concerned than was made by domestic concerns. It is interesting to note, however, that while passenger car output in the United States fell off the first three months of this year as compared with the first three last year, and truck output went up, just the reverse was true across the border. In Canada, about 46,000 passenger cars were built the first quarter this year, as against about 45,000 the first quarter of last; the truck totals on the other hand, were 10,804 and 11,776, respectively.

#### Favorable Returns Not Unexpected

To those who have been watching more or less closely the trend of Canadian production ever since the new duties took effect last April, as a matter of fact, the relatively favorable returns for the first quarter of 1927 are not unexpected, because figures for the last nine months of 1926—when the reduced tariffs were in force—when compared to those for the last nine months of 1925—when the former high tariffs existed—indicated that the reduction of duties had not seriously hampered the Canadian manufacturing industry.

The Canadian output figures for the last three quarters of 1925 and 1926, showed as follows:

	Cars	Trucks	Total
1925 .....	107,217	16,731	123,948
1926 .....	119,067	30,521	149,588

Thus it appears that in the first nine months after the lower duties took effect, passenger car output advanced 11.05 per cent over the same period the preceding year; truck output 82.5 per cent, and total vehicle output, 20.7 per cent.

Early this year, too, leading executives of the Canadian industry confidently predicted a good year for their plants. J. H. Beaton, general sales manager, General Motors of Canada, Ltd., for example, said nearly two months ago that: "In spite of increased production for 1926, which eclipsed the preceding year by 50 per cent, all General Motors divisions are counting on further increases in 1927." Then, too, W. R. Campbell, vice-president and treasurer, Ford Motor Co. of Canada, Ltd., forecast "an excellent year for motor car sales in the Dominion" as far back as the middle of January, indicating that Canadian manufacturing activities would be greater rather than less than a year ago.

And details of first quarter figures, just issued by the Dominion Bureau of Statistics, strongly tend to bear out the recent optimism concerning progress in the automotive manufacturing plants of Canada and to discredit the more pessimistic predictions made by many concerning that industry when tariffs were lowered a year ago.

As already noted, passenger car sales exceeded those of the first quarter last year by about 2.6 per cent. Truck sales, it is true fell off slightly, but the total for the two was almost exactly the same as in the first three months of 1926, the difference being just 37 vehicles. Value of vehicle production the first quarter of 1927 was \$33,763,173 as against \$33,401,699 in 1926, a gain of \$361,474.

And while Canadian plants were holding their output

schedules up to these excellent levels, imports on vehicles increased from 3,777 in the first quarter of 1926 to 6,983 for the first quarter of 1927; their value advanced from \$3,703,403 to \$6,403,792.

All of which indicates, of course, that the Canadian demand for motor vehicles has grown sufficiently to permit maintenance of Canadian factories at levels similar to those of 1926 and at the same time to absorb a definitely increased number of imported vehicles, the greatest importations being made possible probably by the changed tariff conditions. This interpretation is borne out by the fact that Canadian exports dropped slightly the first quarter of this year as compared to 1926—from 24,508 to 21,907. Value of exports for the same periods fell from \$10,500,825 to \$9,543,104.

#### Protest Has Died Out

The budget proposal of the Canadian federal government this year, it is interesting to note, seems to have been received by Canadian industrial interests rather calmly in marked contrast to the great uproar made over the budget which contained the tariff reduction proposals last year. One prominent Canadian industrial journal, *Canadian Machinery and Manufacturing News*, which last year had much to say in opposition to the 1926 budget and the tariff reduction, this year in an editorial comment on the 1927 budget doesn't mention automobiles nor hark back to the reduction made last year. It does commend the 1927 budget proposal for leaving the tariff untouched and says: "For the first time in many springs, Canadian industry finds itself in possession of the details of a budget proposal from its federal government in which there is little ground for complaint."

Thus both statistics and current Canadian editorial comment seem to indicate that instead of being the burning issue it was about 12 months ago, the matter of automobile tariffs has subsided into a position of relative stability and lack of prominence. Most recent governmental economic forecasts, moreover, indicate that the general business situation across the border is favorable, so that a steady demand for automotive products and continued operation of Canadian plants is the logical thing to be expected. The monthly review of business statistics for March, issued by the Dominion government, for example, says that, as regards Canadian business in general, economic activity was well maintained during the first quarter, adding that "it now appears that the high level attained during the preceding year has to some extent been exceeded."

#### Non-Glare Headlight Bulb

THE Siko-Lite headlight bulb, being made by the Siko-Lite Corp., Meriden, Conn., is designed to give more light to the road, to eliminate glare and to have great penetrating efficiency in fog and rainy weather. The new bulb consists of a concentrated filament of 21 cp. inclosed in a bulb, the ends and sides of which are covered with a highly reflective material arranged in such a manner that all the internal reflected light passes out of the bulb.

The effect of glare is said to be eliminated with this new bulb so that dimming devices become unnecessary. Installation is the same as with usual light bulbs.



Siko-Lite Bulb

# U. S. Exports of Cars, Trucks, Tires and Parts

COUNTRIES	GASOLINE PASSENGER CARS										TRUCKS					
	Up to \$500		\$500 to \$800		\$800 to \$1200		\$1200 to \$2000		Over \$2000		Up to 1 ton		1 to 2½ Tons		Over 2½ Tons	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Austria.....	2	\$906	1	\$732	3	\$2,688	1	\$1,176	2	\$1,587	1	\$711				
Azores and Madeira Islands.....			5	2,990	1	808	1	1,425	4	1,836	1	5,732				
Belgium.....			433	214,757	351	330,822	199	248,960	35	\$79,210	384	163,020	4	5,732		
Bulgaria.....			7	4,442	21	19,640	6	8,978	2	4,553	2	2,088	5	5,268		
Czechoslovakia.....																
Denmark and Faroe Islands.....	672	263,045	534	282,989	488	397,500	148	163,042	4	10,584	338	142,814				
Estonia.....			17	10,846	145	122,775	60	68,970	15	35,549	10	7,970	7	6,816		
Finland.....	2	965	5	3,275	24	22,242	8	10,014	4	15,556	30	13,770				
France.....	42	18,265	242	158,344	780	696,464	162	201,093	86	231,898	34	12,539	3	2,657		
Greece.....	48	17,366	7	4,466	8	6,445	2	3,145	1	2,969	11	3,843				
Hungary.....	5	2,285	3	1,763	12	10,257	8	10,720								
Iceland.....			1	706	1	1,183										
Italy.....	44	18,452	1	756	15	13,020	8	8,716	4	13,958	6	2,754	1	673		
Lithuania.....																
Malta, Gozo and Cyprus.....	1	496			5	4,049	3	3,377								
Netherlands.....			77	52,261	80	73,450	55	75,358	5	10,999	2	1,594	16	35,753		
Norway.....	23	9,400	24	14,029	64	52,850	39	40,891	4	10,164	12	8,537	38	48,044		
Poland and Danzig.....			12	8,959	16	13,837	3	3,444	1	3,885						
Portugal.....	5	2,375	88	50,685	28	24,628	32	34,349	4	9,773	38	17,568	2	2,627		
Rumania.....	23	8,619	14	7,727	8	7,524	12	13,051	8	18,250	31	10,403	1	\$3,650		
Russia.....																
Spain.....	12	5,836	182	102,570	179	154,805	204	247,623	71	147,601	200	84,345	14	15,543		
Sweden.....			132	79,799	155	131,757	121	143,289	18	37,049	42	32,318	49	55,683		
Switzerland.....	50	23,540	13	9,003	14	12,955	46	60,474	15	35,549						
Turkey.....	2	855	14	7,322	13	11,003	1	1,064	2	3,737	2	717				
United Kingdom.....	51	18,830	522	348,856	232	184,112	116	147,296	54	135,367	696	311,510	21	22,189	6	8
Irish Free State.....			2	1,512	20	16,696	4	4,505								
Yugoslavia.....	12	5,279	3	1,980	5	4,503	8	8,544	1	3,112						
United States.....																
British Honduras.....	1	352			1	1,009										
Canada.....	251	63,609	2,723	1,547,230	845	830,349	428	571,223	122	359,793	138	92,411	252	382,162	16	40,636
Costa Rica.....	5	1,767	5	3,014	10	8,001	12	14,494			7	4,098				6
Guatemala.....	1	354	1	642	7	5,938	3	4,110	1	2,245	5	3,507	20	24,638		
Honduras.....	5	1,969	3	2,056	2	2,123					5	1,626	2	2,488		
Nicaragua.....	1	500					1	1,850								
Panama.....	18	6,071	10	6,186	15	14,159	11	13,330			18	14,469	6	4,784		
Salvador.....			6	4,238	6	6,468	6	7,689	4	12,590	1	1,078	5	6,408		
Mexico.....	411	160,681	143	88,477	98	92,449	33	44,398	9	20,010	171	80,270	40	68,030	5	24,232
Miquelon.....															1	
Newfoundland.....	1	426	9	5,663	6	5,123	17	20,750			2	866				
Barbados.....				8	7,078	1	1,170						4	4,362		
Jamaica.....	23	4,274	18	10,954	13	11,223	4	4,672	1	1,740	26	9,899	5	3,872		
Trinidad.....			7	2,342	1	633	1	880			2	507	1	3,400		
Other British West Indies.....	7															
Cuba.....	291	110,236	38	22,069	74	62,176	35	45,815	19	50,764	180	63,132	21	17,809	23	100,290
Dominican Republic.....	53	24,658	2	1,432	9	8,200			5	12,499	31	13,197	5	7,492		
Dutch West Indies.....	3	664			4	3,808	3	3,262			13	6,222		3	10,460	
French West Indies.....	2	708									4	1,330				
Haiti.....	1	354	1	531							4	955	1	1,373	1	4,142
Virgin Islands.....	1	475									1	303				
Argentina.....	2,409	871,468	625	361,799	739	616,910	296	328,152	79	178,432	2,024	80,398	65	116,012	43	121,157
Bolivia.....			1	756	2	1,560	5	6,867	4	9,920	1	1,102	3	5,018		
Brazil.....	1,036	379,193	275	164,531	305	254,968	102	120,981	41	97,369	159	76,130	318	154,163		
Chile.....	132	30,007	12	8,115	42	33,855	21	27,326	11	28,651	245	68,911	18	32,857	11	34,981
Colombia.....	23	7,375	9	6,116	81	60,075	28	32,203	18	47,488	15	11,513	52	79,929	9	23,461
Ecuador.....	3	1,074	2	1,236		3,697	3	4,136	1	2,142			2	2,292		
British Guiana.....			6	4,511			4	6,100			13	9,137	10	10,401		
Dutch Guiana.....	3	1,051			2	1,446	1	982			18	5,657				
Paraguay.....			10	6,062	65	60,682	9	11,450	1	2,145	5	3,806	16	25,944		
Seylon.....			31	18,707	66	52,547	23	24,947			2	3,220				
Straits Settlements.....	29	9,685	27	19,867	9	8,447	9	11,621	3	8,409	28	10,801	2	3,599		
China.....	5	2,177	365	180,469	44	34,979	3	3,398	5	13,987	288	126,624	4	7,687		
Java and Madura.....			22	14,195		3	4,136	1	2,142			2	2,292			
Other Dutch East Indies.....												5	1,515			
French Indo China.....	10	3,540										20	10,063			
Hejaz, Arabia and Iraq.....	35	12,148			5	4,006						18				
Hongkong.....	35	12,480	1	732	4	3,835						5,463				
Japan.....	2	733	33	22,293	95	89,559	12	15,473	10	24,312	4	2,696	6	11,252		2
Kwantung.....	12	7,300							1	2,320			2	2,059		
Palestine and Syria.....	15	5,311	6	4,103	6	5,096	4	4,255	1	2,245	3	1,761	5	6,849		
Persia.....	17	6,018		1		868			1	2,320	14	5,521		5	34,063	
Philippine Islands.....	74	28,917	115	72,780	141	133,515	30	42,338	5	15,951	99	30,657	60	40,934		
Russia.....			20	15,034		839						6	6,501			
Siam.....	26	1,204										8	5,188			
Turkey.....	757	329,589	5,252	1,287,030	1,151	891,701	488	583,608	71	152,937	1,626	719,155	93	117,519	12	27,877
Australia.....	3	1,428	63	39,387	151	128,807	46	58,577	9	22,148	10	11,096	9	11,897	9	16,923
New Zealand.....					3	2,242										
British Oceania.....			2	780							2	923				
French Oceania.....																
Other Oceania.....			1	655				</								

for March, 1927

## Canadian Exports

# AUTOMOTIVE NEWS SECTION INDUSTRIES

Philadelphia, Pennsylvania

Saturday, May 7, 1927

## April Makes Slight Gain in Sales—Better May Seen

PHILADELPHIA, May 7—Preliminary reports from scattered sections on the volume of April motor car sales do not indicate that there was a decided gain over March as is normally recorded. But although the usual seasonal upswing may not have taken place, this development is viewed in the industry in the light of the very large volume of business done in March by a majority of the companies. Good spring selling weather came earlier this year in many important sections of the country and it was natural to suppose that the market may have been anticipated to some degree.

A continuation of the current sales volume through May would be regarded as satisfactory but some manufacturers are looking for even better business during the month. Production is being held at approximately the levels prevailing in the latter half of April. A few manufacturers are getting under way on new lines and will probably register slight gains.

Used car stocks are fairly heavy, especially in the rural communities and in some parts of the West and South. While most observers of the industry would like the stocks much lower, there is some consolation in the thought that most of the vehicles were taken in at lower prices than prevailed a year ago.

The finance companies are exerting pressure on dealers to keep used car valuations at a low point. Repossessions have always been higher on used cars than on new vehicles and losses when cars have to be repossessed are correspondingly higher.

Reports on April market conditions collected by *Automotive Industries* from key cities of the nation follow:

(Continued on page 710)

### Chrysler Corp. Breaks Former Delivery Mark

DETROIT, May 2—The Chrysler Corp. has broken its delivery records for all time as a result of the rush of spring orders. Last week was the greatest in the company's history in the point of retail deliveries, and during the past two weeks deliveries have exceeded those of the corresponding period last year by fully a third and were 74 per cent above those of two years ago.

### May to Be Hupp Best

DETROIT, May 5—Hupp Motor Corp. reports April production exceeded same month a year ago by good margin and expects that May will be approximately 600 cars greater than May last year, which would make the month the greatest in company's history. Export sales have been showing a steady increase, with April the best export month of 1927.

vehicles exported, including assemblies abroad, was 487,000. Closed car production in 1926 rose to 72 per cent of the total.

The number of motor car dealers in the United States is shown in the handbook as 52,592.

### Tax Surplus Seen

#### Treasury Standing Argues for Lifting of Excise

WASHINGTON, May 3—New assurances of a substantial tax reduction in the December Congress, in which the automobile industry will be the principal beneficiary, were furnished at the Treasury this week by the announcement that back tax collections for the fiscal year ending June 30 will be unexpectedly heavy. Estimates just furnished to Secretary Mellon show that the back taxes will total \$280,000,000, which is \$40,000,000 more than the original estimates.

If this estimate of \$280,000,000 materializes, the surplus in the United States Treasury will be more than \$500,000,000 and the administration is committed to a tax reduction program, made last fall, which would be made provided the Treasury figures showed a surplus in excess of \$300,000,000. It is predicted that the remaining 3 per cent excise tax on passenger cars will be repealed, in the light of this large surplus.

### Schacht Truck Company Makes Change in Name

CINCINNATI, May 2—The G. A. Schacht Motor Truck Co. announces that effective May 14 the name of the company will be changed to The LeBlond-Schacht Truck Co. There will be no change in officers or management.

The hyphenated name was taken to honor R. K. LeBlond, of the R. K. LeBlond Machine Tool Co., who has been associated with the Schacht company since its inception 14 years ago. Along with G. A. Schacht and William Schacht, the latter now being president of the truck concern, he has been active in formulating all matters of policy and assisting in the company's development.

Products of the company will continue to be known as Schacht trucks and buses.

### Overland Sales Gain 27%

TOLEDO, May 4—Willys-Overland Co. reports total sales for the first four months of the year as 80,732, an increase of 27 per cent over the same period in 1926. April sales in the United States and Canada totaled 27,401, an increase of 49 per cent over April sales last year.

### Knight Truck Line for Willys Export

NEW YORK, May 5—John N. Willys Export Corp. is offering a series of truck chassis with six-cylinder Knight engines for the export field exclusively.

The trucks are offered in three sizes—1½, 2 and 2½-3 tons—with two wheelbases offered in each size and with the price range extending from \$1,485 to \$2,440.

The line will be known as Willys-Knight trucks and will have four-wheel brakes. The 3-ton model will have a four-speed transmission with double reduction rear axle. The other models will have conventional three-speed transmission.

Engine sizes in the 1½-ton model are 2 15/16 by 4%, and in the larger models 3 1/4 by 4%.

The complete range of sizes and prices is as follows:

1½-ton, 134-in. w. b., \$1,485; with 151-in. w. b., \$1,520.  
2-ton, 150-in., \$1,875; 164-in., \$1,910.  
2½ to 3-ton, 150-in., \$2,400; 164-in., \$2,440.

### New Features in N.A.C.C. Handbook

NEW YORK, May 4—Monthly production figures for the industry as far back as January, 1913, are included in the Eighth Annual Edition of Facts and Figures of the Automobile Industry, released this week by the National Automobile Chamber of Commerce.

Other new features are the number of motor trucks used in the different industries, charts and data on the Interstate Commerce Commission hearings on motor transportation and a new tabulation of the number of motor vehicles registered in different countries of the world.

The wholesale value of motor vehicles and parts business in 1926 is shown as \$4,696,945,000 and number of

# Graham Brothers Acquire Paige to Reenter Industry

**Buy Out Jewett Interests to Get Control—Joseph B. Graham to be President—"In to Stay," He Says—Continue Present Line**

NEW YORK, May 5—Acquisition by the Graham Brothers of the Paige-Detroit Motor Car Co. takes rank as the leading automotive transaction since the sale of Dodge Brothers, Inc., to Dillon, Read & Co. in 1925.

The Graham brothers, Joseph B., Ray A. and Robert C., are primarily known in the industry as truck executives, but in their years at Dodge Brothers the sale of their truck products has been closely related to passenger car building and merchandising. They are widely known by reputation to the dealers of the country and this fact will undoubtedly bring to them a strong retail organization. The present products of the Paige company, according to the statement of the Grahams, are to be continued.

The plant and equipment of the Paige company combine to make what is known in the industry as one of its most modern establishments. With large increases in capital, immediately available, it is generally expected that the Paige company will launch at once a vigorous sales campaign which will give its products wide national distribution.

Control and management of the Paige Detroit Motor Car Co. was purchased subject to ratification by the stockholders. The Grahams will make an initial investment of \$4,000,000 in the company and also plan to expend an additional \$4,000,000 for improvement and expansion as it becomes necessary.

#### Wheeler Will Remain

Joseph B. Graham will become president, and Robert C. Graham, vice-president, and with the consummation of the deal Harry M. Jewett, chairman of the board, and E. H. and F. L. Jewett will retire from the Paige company. While other possible changes in personnel were not included in the statement, it is understood that W. A. Wheeler, who succeeded Harry Jewett as president, will remain with the organization.

Coincident with the announcement the Paige company sent communications to all dealers informing them that the present line of cars will be continued and that there will be no radical changes in the distribution organization. The transaction was decided upon at a meeting of the Paige board of directors in Detroit late Tuesday when they entered into a contract with the Graham brothers to pass controlling interest to them subject to approval of the stockholders. The date of the meeting of Paige stockholders to act on the matter has not been set yet.

Under the plan the common stock will be increased from 1,000,000 to 1,500,000

shares and \$4,000,000 worth of 7 per cent cumulative, voting, convertible second preferred stock will be issued. The Grahams will acquire all common stock now owned by the three Jewetts and it is not contemplated to make any stock offering to the public at this time.

#### News Not Surprising

News that Graham brothers had acquired control of Paige did not come as a surprise to local automotive and financial circles, who have had their name linked with many rumors in recent months which indicated they were interested in reentering the automobile manufacturing field and only recently they formally announced the incorporation of the holding company bearing their name. They also acquired control of the Libby Owen Co., glass manufacturer, several months ago.

Joseph B. Graham said today: "In taking control of the Paige organization we realize that the Paige factories in Detroit with over a million square feet of floor space are the most modern and efficient in the industry. My brothers and I are in the automobile business as manufacturers to stay."

The Graham brothers have been in the automotive industry since 1916 when they formed Graham Brothers, an Indiana corporation which became the world's largest producer of motor trucks. They entered the Dodge organization in 1925 as the chief executive officers of the company, retiring last year when they disposed of all their interests in Dodge Brothers and Graham Brothers Truck Co. The Paige company was organized in 1909 and during the past three years built one of the finest plants in the industry on a 45-acre site on Warren Avenue. At the present time the company has outstanding 676,474 shares of no par common stock.

#### Quarter Report Shows Loss

Paige-Detroit Motor Car Co. and subsidiaries for quarter ended March 31, 1927, show net loss of \$185,798 after all charges. This compares with net income of \$505,369 or 70 cents a share earned on 676,474 no-par shares of common stock, after allowing for 7 per cent preferred dividend requirements in first quarter of 1926. Sales for the quarter totaled \$5,952,669 against \$17,399,927 in same quarter a year ago.

## Business in Brief

Written exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Co.

**NEW YORK, May 5**—Considerable irregularity characterized business movements last week. The floods in the Mississippi Valley have naturally had disastrous effects within the affected areas. The coal strike, on the other hand, has as yet exerted no marked influence on the general course of trade. Stock prices declined sharply last week, while the commodity price level showed little change. Money rates remained easy.

#### FREIGHT CAR LOADINGS

Railway freight loadings during the week ended April 16 totaled 956,875 cars, which compares with 959,474 cars in the preceding week and 964,794 cars a year earlier. Loadings other than coal, however, were more numerous than a year ago.

#### OIL PRODUCTION

Another increase in crude oil production occurred during the week ended April 30. Output averaged 2,499,950 barrels daily, as against 2,478,100 barrels a week earlier. Numerous reductions in gasoline prices were reported last week, while prices of crude petroleum were substantially unchanged.

#### BANK DEBITS

Bank debits to individual accounts reported to the Federal Reserve Board for the week ended April 27 were 8.1 per cent above the figure for the preceding week and 8.2 per cent above that for the corresponding period last year.

#### FISHER'S INDEX

Fisher's index of wholesale commodity prices stood at 139.6 last week, as against 139.5 a week earlier and 140.3 four weeks earlier.

#### FEDERAL RESERVE STATEMENT

Bills and securities held by the Federal Reserve banks increased 9,400,000 during the week ended April 27, a gain of \$29,100,000 in discounts being largely offset by declines of \$5,500,000 in open market purchases and \$14,500,000 in holdings of government securities. Note circulation declined \$11,500,000, while deposits increased \$14,300,000 and reserves \$4,200,000. The reserve ratio was unchanged at 79.5 per cent.

During the same period, loans of reporting member banks increased \$37,000,000, with a gain of \$57,000,000 in security loans and a decline of \$2,000,000 in "all other" loans. Investments increased \$57,000,000, borrowings from the Federal Reserve banks \$23,000,000, net demand deposits \$10,000,000 and time deposits \$53,000,000. Loans to brokers and dealers, secured by stocks and bonds, made by reporting member banks in New York City increased \$5,000,000.

The call loan rate ranged from 4 to 5 per cent last week, as against 4 to 4½ in the preceding week.

## Murray Corp. Earns \$293,546 in Quarter

**Current Assets Compare With Current Liabilities Better Than 4 to 1**

DETROIT, April 30—The automotive industry and financial circles are taking a keen interest in the first quarterly statement issued by the Murray Corp. of America, which was the outgrowth of the receivership of the Murray Body Corp., and which shows the new organization gaining a very favorable position.

After depreciation and interest charges but before Federal taxes, the company with its subsidiaries had earnings of \$293,546.99 which, after the preferred dividend, is equal to \$1.07 a share on the 269,333 shares of no par common stock outstanding. Gross profit was \$587,430.52.

Current assets of the corporation, including cash in banks and on hand, reorganization committee funds, U. S. Government 3½ per cent bonds, customers' accounts and inventories, aggregated \$9,483,132.81.

### Capital and Surplus 12 Millions

Current liabilities embracing accounts payable, accrued interest, taxes, etc., are \$2,180,875.26. Long-term liabilities total \$4,610,856, and reserve for contingencies is \$1,250,917.46. Capital and surplus including 2618 shares of 8 per cent preferred stock, par \$100 and 269,333 shares of common stock, no par, are set at \$12,314,706.33.

"Earnings in the first quarter of 1927 do not represent a full measure of the company's earning capacity," William Robert Wilson, chairman of the board, declared, "due to necessary adjustments following the taking over of the plants and business from the receiver of the Murray Body Corp. and the expense of getting production under way at the new Indianapolis plant. In addition, the automobile industry in general has been pursuing a conservative production program thus far this year. New contracts with Dodge Brothers and Jordan go into production shortly and will be reflected in earnings later in the year."

### Invents New Engine Type

WASHINGTON, April 30—A new type of internal combustion engine which has no crankshaft, connecting rods, camshaft, valves or timing gears, has been invented by an Australian engineer, the U. S. Department of Commerce announced this week.

The engine, circular in shape, consists of a set of six cylinders, piston rings and pins and a movable cylinder head. Each cylinder has a 2-in. bore and 2-in. stroke. The engine is said to be only one-fifth as large as the ordinary motor of the same power. It is said to develop high speed with low gasoline and oil consumption.

### Tax Collections Drop \$5,663,666 in March

WASHINGTON, April 28—A total of \$4,483,094 in excise taxes was collected from the automobile industry during March, compared with \$10,146,760 collected in March of last year, according to figures just announced here by the United States Internal Revenue Bureau. The difference between the two periods is due to the elimination of taxes on trucks and parts and the reduction from 5 to 3 per cent on passenger cars.

Total collections for the first nine months of the fiscal year of 1926 were \$88,104,163, compared with collections the first nine months of the 1927 fiscal year of \$46,921,222.

## Rubber Exports Cut

### Now 60% of Standard Output—Possible Shortage Distant

NEW YORK, May 3—The latest cut in rubber exports from the restricted areas brings the allowance down to 60 per cent of standard production, but fortunately for the rubber and automotive industries the cut comes at a time when world's stocks are at a very high level. Shipments have been in excess of predictions made earlier in the year and the resulting accumulation of crude added to the heavy carry-over from 1926 has placed the period of possible shortage far in the future.

On the other hand, a release of additional exports is possible only under heavy penalties to buyers, as under the Stevenson regulation the average London stock price must remain above 24 d. for three successive quarters before 70 per cent is again allowed to be exported. In the quarter ending April 30, the price was 19.696 d. For another increase in the allowance to 80 per cent, a fourth quarter with an average price of 24 d. or better will be necessary.

### I.A.C. Moves Offices

NEW YORK, May 3—The executive offices of the Industrial Acceptance Corp. engaged in financing Studebaker dealers exclusively, have been transferred to new and larger quarters in the Graybar Building, Lexington Ave. at Forty-third St. Industrial Finance Corp. also moved to this address.

### Robert Bosch Moves

NEW YORK, May 3—The New York headquarters of the Robert Bosch Magneto Co., Inc., were moved May 1 to the new Robert Bosch Building, Queens Boulevard and Buckley St., Long Island City.

## April Tire Trade 50% Ahead of 1926

**May Schedules Call for Heavy Production With Day and Night Shifts**

AKRON, May 5—Akron rubber manufacturers report that sales and production of automobile tires during April were upwards of 50 per cent ahead of business in the same month last year.

Some authorities have been expecting a normal recession in tire production, owing to the unusually large number of casings and tubes manufactured and sold in the first quarter of 1927, but so far most of the rubber companies in the district have continued to operate almost at top speed.

Schedules to be followed early in May call for continued heavy tire production, with day and night shifts in operation.

It is estimated that more than 3,500,000 automobile casings were manufactured by Akron companies last month. Total output of the industry for the first four months of the year has equaled the most sanguine expectations.

Many new high records recently have been reported by individual concerns. The B. F. Goodrich Co. during the latter part of April forged ahead with new high production records. Last week production of the one hundred millionth tire by the Goodyear Tire & Rubber Co. was announced. The Firestone Tire & Rubber Co. is completing additions to its Plant 2, which will increase tire production by 5000 a day.

### Boyce Decision Upheld in U. S. Appeals Court

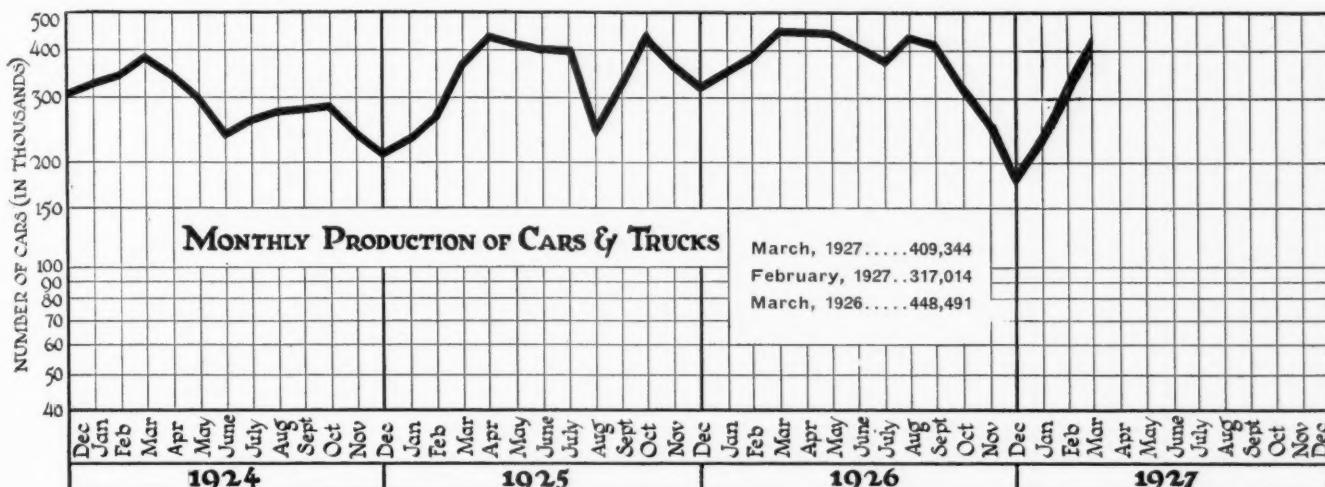
NEW YORK, May 2—Decision in favor of Harrison H. Boyce and the Moto Meter Co., Inc., in the suit for infringement against the Semaphore Indicator Co. and the Semaphore Indicator Sales Co., has been upheld in the U. S. Circuit Court of Appeals at Chicago, and the immediate enforcement of the decree of the lower court was directed.

An injunction has been issued terminating the further manufacture or sale of the Moore motor semaphore. Accounting proceedings to determine the amount of damages and profits payable by the Semaphoric Indicator companies are now under way.

### Seiberling Sales Gain 61%

AKRON, May 2—Sales of the Seiberling Rubber Co. for the first three months of 1927 show an increase of 61 per cent over the same period last year, the totals being 179,725 and 111,300 tires respectively. The company's entire output is now being manufactured by a new water-bag process, which is declared an improvement over the live steam method of vulcanization. A puncture-proof tube has been announced.

# March Output Holds to Upward Trend



## Air Tour Routed

Planes to Hop Off at Detroit  
June 27, Return July 12

DETROIT, May 2—Announcement of a tentative route to be followed in this year's National Air Tour has been made here. Planes will leave the Ford Airport at Detroit June 27, returning there on July 12. Intermediate stops are at present scheduled as follows:

June 27, Toronto; June 28, Buffalo; June 29, Schenectady or Albany; June 30, Boston; July 1, New York; July 2, Philadelphia; July 3, Pittsburgh; July 4, Cleveland; July 5, Louisville; July 6, Memphis; July 7, Dallas or Fort Worth; July 8, Tulsa or Muskogee; July 9, Wichita; July 10, Omaha; and July 11, Chicago.

These will be overnight stops. In addition the 1927 tour will provide for a number of stops in various towns along the route.

Members of the committee in charge of selecting the route are Geo. M. Holley, president, Holley Carburetor Co.; William B. Mayo, chief engineer, Ford Motor Co., and Ray Collins, of the Union Trust Co., who will act as traveling referee.

## Body Plant for Sydney

WASHINGTON, May 2—A new motor vehicle body building factory is being constructed for Smith & Waddington, Ltd., of Camperdown, at Sydney, it was announced here by the U. S. Department of Commerce. When completed the factory will be the largest of its kind in New South Wales. It will cost about £100,000.

## Cuban Car Trade Better

WASHINGTON, May 5—Slight improvement in Cuban automobile sales has been noted during the first quarter of this year as compared with the previous quarter, the U. S. Department of Commerce was informed this

week. A total of 796 units of three leading makes was sold, as compared with 647 during the preceding quarter, but the market is still "somewhat depressed," as compared with the same quarter of 1926 and 1925. Economic depression is said to be responsible for the slowness of the market.

## Draw Final Plans for Foreign Trade Meeting

DETROIT, May 2—Final plans are being made to entertain the 2500 delegates who are expected for the Foreign Trade Convention to be held in Detroit May 25, 26 and 27. A group of 40 Latin-Americans will attend the first day's session. The 500 Canadian delegates will have charge on the second day while speakers for the third day will be from Australia, South Africa, the Irish Free State and other parts of the British Empire.

Among the prominent speakers who will appear during the convention are Herbert Hoover, Secretary of Commerce; James A. Farrel, president, United States Steel Corp., and Roy D. Chapin, of Hudson and the National Automobile Chamber of Commerce.

A local general committee headed by Hon. Charles Beecher Warren, former ambassador to Japan and Mexico, is arranging the details of the meeting which will be one of the most important from an export standpoint ever held.

## Brazil Car Sales Leap

WASHINGTON, May 2—The first quarter of 1927 was marked by a considerable increase in sales of all automotive products in Brazil, the U. S. Department of Commerce was advised this week. The increase, however, has been short of what dealers anticipated.

Sales were hampered by a 20 per cent increase in import duties and by a fall in exchange rates, both of which necessitated separate price increases. Heavy rains in the interior and a sharp increase in taxes on automobiles in Sao Paulo were contributing factors.

## Patent Office Change

### Bureau Functions Under Re-organization Reforms

WASHINGTON, May 3—Largely through the efforts of the Patents Committee of the National Automobile Chamber of Commerce, the reorganization of the Patent Office of the United States has been completed and the new method of securing patents and appeals became in force as of May 2. Records of the office show that approximately 16 per cent of the 110,000 applications for patents each year are on some phase of the automobile industry.

The biggest single feature of the reorganization is the elimination of 50 per cent of the procedure in noting a patent appeal, which will save manufacturers from one to three years in having their claims settled. Some 6000 appeals are noted each year.

A. J. Brosseau, formerly a member of the N. A. C. C. Patents Committee was one of five men who served for two years as a special committee of reorganization which made the recommendations for the changes in the office.

## Mexican Sales Drop

WASHINGTON, May 2—The Mexican automotive trade has been hard hit, with sales of low-priced passenger cars at approximately the same level as last year but with heavy decreases in sales of medium and high-priced cars, the U. S. Department of Commerce was notified this week.

## Ursus Trucks Delayed

WASHINGTON, April 30—Production of trucks by the Ursus Company, Poland, has been delayed by serious financial difficulties and the first truck will not be out until September, the U. S. Department of Commerce was advised this week by its commercial attaché at Warsaw.

## Puzzling Situation in Sheet Advance

### Boost Coming With Decline in New Business Makes Steel Market Uneasy

NEW YORK, May 5—Interest in the steel market this week centers in what fate awaits price advances in sheets announced by Mahoning Valley rollers. Following on the heels of an advance from 2.75c to 3.00c for No. 24 gage, black, promulgated by a Youngstown interest, leading rollers of full-finished automobile sheets have raised the price for 20 gage body stock from 4.15c to 4.25c.

Producers' explanation of these advances is that they simply could not carry on any longer at the previously prevailing price levels, without being compelled to use red ink in profit and loss statements. For weeks and weeks they waited for a more favorable opportunity than the one which they were finally compelled to choose, to elevate price levels for sheets, but the steel market, while much more brisk a month or six weeks ago, was never quite so animated as to support an upward price movement all along the line. So they finally bit into the sour apple, and announced price advances at the very time when new business was declining at such a rate as to make the market as a whole uneasy.

#### General Outlook Disappointing

To consumers, at least to many to whom the upward change in prices came as a surprise, the situation is rather puzzling. Are the producers convinced that much more business overhangs the market than is now in sight?

Taking steel products generally, the outlook is disappointing to producers, but it is quite possible that conditions may change over night.

**Pig Iron**—Automotive foundries are being offered iron at slight concessions from prices quoted a fortnight ago, although the Detroit market is nominally quoted unchanged. Blast furnace interests are still inclined to pin their faith in the coal strike becoming a bullish factor before midsummer is over.

**Aluminum**—The market rules quiet and easy at unchanged price levels. Imports run light. A fair amount of remelted metal is being taken on by foundries.

**Copper**—Try as they will, copper producers appear unable to lift the market out of its rut. Some improvement is looked for as the result of a good showing expected in the market's statistical position which is to be revealed next week, when end-of-April figures are due to be published. Automotive brasses enjoy fair inquiry.

**Tin**—Most of the business is of a speculative character, consumers buying gingerly.

**Lead**—The market continues dull and weak. Storage battery manufacturers are not greatly interested.

**Zinc**—Indications are for a modest recovery following recent price dips.



Charles L. Sheppy

### Sheppy, Pierce-Arrow Chief Engineer, Dies

BUFFALO, N. Y., May 4—Charles L. Sheppy, 56, chief engineer of the Pierce-Arrow Motor Car Co., died at Summerville, S. C., on May 2. He was one of the pioneers of the automobile industry, having joined the George N. Pierce Co., predecessor of the Pierce-Arrow Motor Car Co., in 1898, and continued his connection with the firm to the time of his death.

His first position with the Pierce company was that of experimental engineer, and he assisted in the development of the first model marketed by the company, the little 2½ hp. motorette.

In 1922 he was appointed chief engineer of the Pierce-Arrow company, and in that capacity he had charge of the development of the Series 80 and of the large dual valve car Series 36, which made its appearance last fall.

### Farm Wife's First Necessity is Car

WASHINGTON, May 5—Of all the necessities to the American farm housewife the automobile ranks first. Running water in the kitchen ranks second, sink third, telephones fourth and a radio fifth.

This is revealed as the result of answers received to 40,000 questionnaires sent out to American farm women by the General Federation of Women's Clubs, the results of the survey being announced here. Nearly four-fifths had automobiles.

## Financial Notes

E. I. du Pont de Nemours & Co. for the quarter ended March 31, 1927, shows consolidated net income of \$15,458,268 after interest, Federal taxes, etc., equivalent after debenture dividends to \$5.26 a share earned on 2,661,658 shares of no par common stock. This compares with \$14,225,769 or \$4.90 a share on same share basis in first quarter of 1926. Profit and loss surplus on March 31 last was \$93,553,672, comparing with \$65,739,234 on March 31 a year ago.

The Moto Meter Co., Inc., and subsidiaries report for the first quarter of 1927 a net income of \$230,993 after depreciation and Federal taxes. Under the participating provision of the shares, this is equal to 90 cents a share earned on the 200,000 shares of no par Class A stock and 25 cents a share earned on 200,000 shares of no par Class B stock. This compares with \$522,215 or \$1.38 a share on Class A and \$1.22 a share on Class B stock earned in the first quarter of 1926.

Allis Chalmers Mfg. Co. during the first quarter made net profit of \$850,163, equal after preferred dividends to \$2.18 a share on the common, against \$1,016,670 or \$2.82 a share in the preceding quarter, and \$828,401 or \$2.09 a share in the first quarter last year. Unfilled orders on March 31 were \$11,561,978 against \$11,634,711 on Dec. 31 and \$10,787,000 a year ago.

Commercial Investment Trust Corp. has paid the \$2,000,000 Series B notes of its 5 per cent serial gold notes issued in 1925, due May 1. This was the second annual payment of these notes, the Series A notes having been paid when due on May 1, 1926. The total issue was \$10,000,000 and has been reduced to \$6,000,000, all maturities having been met from current assets.

National Gauge & Equipment Co., whose entire common stock is owned by Moto Meter, reports a net income of \$117,154, after depreciation and Federal taxes, for the quarter, against \$97,323 in the same quarter of 1926.

Parker Rust Proof Co. directors have declared the regular semi-annual dividends of 3½ per cent on preferred stock and 25 cents a share on common, payable May 20 to stock of record at the close of business May 10.

Peerless Motor Car Corp. reported for the quarter ending March 31, a net loss of \$168,798, after depreciation and charges, against net profits of \$205,802 in the first quarter of 1926.

Federal Motor Truck Co. has declared a stock dividend of 2½ per cent and the regular quarterly cash dividend of 20 cents. The stock dividend is payable July 5 and the cash, July 1.

### Ask Glass Duty Rise

WASHINGTON, May 3—A recommendation that plate glass tariffs be increased 50 per cent, as a means of aiding the domestic plate glass industry, was made this week to President Coolidge by Senator Reed (Rep.) of Pennsylvania, heading a delegation of plate glass manufacturers to the White House.

## Urges Cooperation With Alien Makers

Chapin Deprecates Cut-Throat  
Tactics in Plea for Build-  
ing Up Consumption

WASHINGTON, May 3—Cooperation with foreign manufacturers in the building up of world consumption of goods rather than cut-throat competition for markets based on mutual distrust was advocated by Roy D. Chapin, president of the National Automobile Chamber of Commerce, before the American Section of the International Chamber of Commerce here this week.

The meeting at which Mr. Chapin spoke preceded the convention of the United States Chamber of Commerce, which drew more than 1500 business leaders to the national capital.

Unless the world's standard of living is raised by higher output per worker, better transportation and other means found successful in the United States, American manufacturers are destined to find themselves without adequate foreign outlets for surplus productive facilities, Mr. Chapin warned.

Advocating high wages as a necessary concomitant to permanent industrial prosperity, H. H. Rice, assistant to the president, General Motors Corp., said that wages had been maintained and business broadened in the face of declining prices through rapid turnover, elimination of waste, prevalence of research, instalment selling, elimination of class distinction and the efficiency promoted by the automobile and good roads.

A. J. Brosseau, president of Mack Trucks, Inc., and Stanley H. Bullard, vice-president of the Bullard Machine Tool Works, were among the directors reelected.

Developments favorable to good business in the United States were commented upon by John W. O'Leary, president of the Chamber, while Thomas W. Lamont, of J. P. Morgan & Co., saw a brightening future in Europe.

### Reo Adds to Truck Line

LANSING, May 2—Addition of a speed wagon junior to the Reo truck line has been announced by the Reo Motor Car Co. Inside length of the body from back of front seat is 72 in., while the width of the belt line is 46½ in., wheelbase is 114 in. and 28 x 5.25 tires are used. The beveled gear Salisbury rear axle has a reduction of 4 to 1.

### Velie Adds Roadster

MOLINE, April 30—Velie Motors Corp. has added a roadster model to its standard six line, priced at \$1,165. The car with rumble seat has accommodations for four passengers. The body is finished in two-tone lacquer in two optional combinations. Upholstery is in pebble-grained blue or green leather.

### German Automobile Industry Suffering

WASHINGTON, May 4—Foreign competition, particularly from American manufacturers, is ruining the automobile manufacturing industry in Germany, according to advices received by the U. S. Bureau of Foreign and Domestic Commerce. And this is true, it is pointed out, despite the tariff, which averages \$21 per hundredweight, or about 50 per cent on the value of the car.

More than 20 per cent of the automobile imports last year were American makes. At the present time but 20 German companies remain in the manufacturing field, others having closed or consolidated. The association of German manufacturers has proposed a reduction in passenger car and motorcycle tax rates.

## American Welders Name New Officers

NEW YORK, April 30—The eighth annual meeting of the American Welding Society was held this week at the Engineering Societies Building. On Wednesday, the first day of the meeting, the gas welding committee and the electric arc welding committee of the American Bureau of Welding met. The American Bureau of Welding is the welding branch of the American Engineering Research Committee.

The following officers were elected for the ensuing year: President, F. M. Farmer, New York Electrical Testing Laboratories; senior vice-president, J. H. Edwards, American Bridge Co., New York; divisional vice-presidents, southern division, R. L. Shepard, Electrical World, Birmingham, Ala.; Pacific Coast division, G. O. Wilson, Standard Oil Co., San Francisco.

It was announced at the meeting that the society now has 854 members, a slight gain as compared with last year. There was a total attendance of about 200 at the meeting.

### Enters Marine Motor Field

DETROIT, May 2—The Chrysler Corp. has entered the marine motor field and opened up a newly organized marine engine division. The Chrysler Imperial Marine engine is the name of the new product.

The motor is of the L-head, six-cylinder type, with block cast integral with a specially webbed crankcase. It weighs only 835 lb. and develops well over 100 hp. Its pitch adaptability makes it available for hulls of a wide variety of design without danger of reduced efficiency.

## March Exports Set an All-Time Record

Passenger Car Total is High-  
est Ever But Truck Figure  
is Under February

WASHINGTON, May 3—Exports of automotive products from the United States during March attained the highest point ever reached in any one month in the history of the industry, according to revised figures of the automotive division of the U. S. Department of Commerce.

Passenger car exports totaled 29,985, the highest monthly sum ever shipped from this country, as compared with 21,355 in February and 22,278 in March of last year. Exports of trucks in March amounted to 7646, as compared with 10,120 in February and 5674 in March, 1926.

Combined exports of passenger cars and trucks during the first quarter of this year totaled 98,932, as compared with 82,496 units in the same period last year. This was achieved despite a decrease in production from 1,077,771 in the first quarter last year to 919,687 during the first three months of the present year.

The unit value of passenger car exports dropped from \$737 in February to \$712 in March, while truck values increased from \$595 to \$636.

Only 35 automobiles and chassis were imported during March as compared with 44 in March, 1926.

### Compulsory Insurance Bills Meet with Defeat

WASHINGTON, May 2—Compulsory automobile insurance proposals have met with such sweeping defeat in many state Legislatures that it is doubtful whether the issue will be raised again in the radical form which has caused nation-wide opposition, according to a statement issued here this week by the American Automobile Association.

Of 28 state Legislatures which have acted on bills of this character so far this year, the A.A.A. announcement stated, 10 have already adjourned after defeating the measures, 15 have shelved the bills, two have passed bills patterned after the Connecticut law, which is aimed only at the reckless driver, and in the other the matter is pending.

### Special Sedan for Chandler

DETROIT, May 3—Announcement has been made by the Chandler-Cleveland Motors Corp. of the addition of a special six sedan de luxe, listing at \$1,345, to its line. Upholstery is blue-gray mohair, while exterior finish is in optional two-tone lacquer. In addition to usual equipment, this model is furnished with circassian instrument board and door panels, arm rests, robe cord, and rear quarter lights.

# April Sales Slightly Better Than March

(Continued from page 704)

## BOSTON

Motor car sales in April did not reach the peak that had been anticipated by the dealers. Outside of Boston some of the bankers have notified the finance companies to shorten up on their time payments and get larger initial deposits if they care to get loans. Some finance company officials say they are not anxious to take all the paper handed out. They report a slowing up of sales.

The used car market is improving. This is due to the fast work of some of the big distributors who are cleaning out their stocks.

## NEW YORK

New car sales in the metropolitan area in April were only slightly better than in March and were considerably below the level of April, 1926. Sherlock & Arnold's figures for the first two weeks of April show a total of 6505 sales against 8843 in the first two weeks of April a year ago. The total for the month of March this year was 13,039.

General business continues good and used car stocks in metropolitan dealers' and distributors' hands are in satisfactory condition. The same cannot be said for the majority of dealers in smaller towns in the nearby districts, where used car stocks are considerably higher than normal.

## CLEVELAND

Business conditions do not measure up to the standards set a year ago at this time. This is apparent from the first 28 days' sales reports which shows new car sales have slumped from 5527 in April, 1926, to 4378 in April, 1927. Used cars sales, however, have passed the April, 1926, marks of 11,712. The new total is 11,741. Ford car sales have again this month dented the total. However, other distributors report a business decrease ranging between 20 and 30 per cent. This is blamed on the inclement weather conditions and the large numbers of unemployed.

## ATLANTA

With more favorable conditions prevailing in the Southeast during April than at any time this year automotive sales showed a steady improvement. Total sales for April were fully as large as in April, 1926, and many dealers and distributors showed a fair gain.

Truck sales also continued to show a steady improvement through April, with sales better than they were in April of 1926.

## ST. LOUIS

Sales of new cars in the city are satisfactory but through the rural districts in the adjacent territory sales are practically at a standstill due to depressed business conditions caused by floods. New car stocks have accumulated to some extent but are not unwieldy. Ford sales have improved to some extent but Chevrolets are still outselling Fords in this territory. Truck sales are fair in the city.

## KANSAS CITY

Motor car sales for April in Kansas City on the whole have been very satisfactory in

spite of excessive rains for more than half a month. This cut down business 25 per cent, most dealers believe.

While exact figures have not been compiled, indications are April will show a gain of 25 to 35 per cent over April a year ago. The used car situation is not so good as the bad weather cut their sales more than on new cars. Most of the leading dealers, however, have their used car situation well in hand.

## CHICAGO

New car sales in Chicago during April appear to have scored a much better gain over the month preceding than did April, 1926. Practically all dealers report improved business. If sales on credit may be accepted as a safe barometer, as represented in the business of finance companies handling more than half of the total local volume, the gain over March was above 20 per cent. Last year April's gain over March was hardly 5 per cent.

Strenuous efforts have been made in the past 30 days to move used cars. Commercial car sales also have improved and the betterment should continue. For some time there has been a growing tendency on the part of banks to insist more on the application of stricter crediting rules.

## COLUMBUS

Dealers and distributors of passenger cars in Columbus and central Ohio report a much better volume of business in April than during March. Sales, however, are 10 to 15 per cent below the records of April of last year. The slump which hit the industry in Columbus early in the year is apparently continuing, although better weather conditions, coupled with more persistent sales effort, had the effect of overcoming a part of the lull.

The used car trade was slightly improved. Dealers are now using different methods in appraising used cars and the seriousness of the problem is gradually being worked out.

The demand for commercial vehicles has been somewhat better. Heavy truck sales were practically 40 per cent better in April than in March.

## DALLAS

Unseasonal weather, cold and wet, put a damper on the automotive business in Texas and parts of adjoining states during April, except in isolated places and for certain lines. Ford sales were still low.

New car sales were about the same as for March and less than April a year ago. Some dealers have pretty heavy stocks.

Used car sales are about the same as for March and less than for April, 1926. Stocks are heavy and prices lower. Truck sales were less than for March and below April a year ago.

## NEW ORLEANS

Flood situation here and in this vicinity has had a very depressing effect on the sale of new automobiles. Situation looking much better with the cutting of levee which will relieve danger in New Orleans. Sale of tires and accessories has sustained only slight depression. Will be at least a month before situation here will be normal.

## MINNEAPOLIS

The automobile business in the northwest is not so large as a year ago, but it is better than 10 days ago. The prospect is good as the people give evidence of having money to spend. However, driving on Minnesota roads is not feasible, speaking generally, and farmers are busy planting. Barring unforeseen contingencies the outlook is tremendous for northwestern crops, on which the automobile trade is based. The used car situation is good except in spots. Cars are being taken on a better basis and are selling better.

## DETROIT

Indications are that automobile sales in Michigan for April will have shown an appreciable gain over March, according to reports from various state points. Favorable weather conditions and settled roads after the usual spring break-up have both contributed to bringing about a greater demand for automobiles, both in passenger and commercial lines. Besides new cars, there has been an increasing demand for used automobiles with a result that used car stocks which in many instances were unusually heavy at the beginning of the year, are adjusting themselves in a satisfactory manner. Car sales in Michigan so far this year have been running behind the figure of a year ago.

## SEATTLE

April saw a slowing down in sales, compared with a year ago and the first quarter shows fewer cars sold and less money spent than a year ago. In isolated cases sales are ahead. Chevrolet continues to lead Ford. Last month in Seattle, 259 Chevrolets were sold to 181 Fords. Slowing up of sales is due to the temporary and voluntary curtailment of lumber output to meet market conditions, and to the belief that early frost may have damaged crops in agricultural sections east of the Cascade Mountains.

The used car situation is good and credits have been fairly good. Demand for trucks is about that of last year.

## SAN FRANCISCO

Automobile sales in this territory for April show about 10 per cent less than for April last year, but are about 12 per cent better than for March, this year, when heavy rains offered great sales resistance. Owing to promise of record crops and to generally improving business conditions all over Pacific Coast, the banks are somewhat more liberal in automobile financing than a year ago.

Trucks moving slightly better than a year ago and considerably better than last month. Dealers generally pleased with April business and prospects for May.

## DENVER

The first half of this month brought very unfavorable weather to the Rocky Mountain territory, and a resultant slump in average sales. Light trucks are moving quite briskly in the farming sections, particularly in northern Colorado. Heavy trucks are very quiet in Colorado and New Mexico, but are moving in good shape in the Wyoming oil fields, and the Montana mines.

## Exports, Imports and Reimports of the Automotive Industry for March of Current Year and Total for Three Months Including March, 1927

	Month of March		Three Months Ending March			
	1926 Number	1926 Value	1927 Number	1927 Value	1926 Number	1926 Value
Automobiles, parts and accessories .....	..	\$33,306,030	..	\$37,780,044	..	\$87,617,145
Electric trucks and passenger cars .....	9	21,051	15	19,941	16	30,394
Motor trucks and buses except electric .....						
Up to 1 ton, inclusive .....	4,450	2,183,505	5,962	2,597,894	13,147	6,163,738
Over 1 and up to 2½ tons .....	1,039	1,381,345	1,532	1,780,929	3,001	4,030,135
Over 2½ tons .....	185	508,902	152	481,822	544	1,725,171
Total motor trucks and buses, except electric .....	5,674	4,073,752	7,646	4,860,645	16,692	11,919,044
PASSENGER CARS						
Passenger cars, except electric:						
Value up to \$500, inclusive .....	8,038	3,117,792	7,834	2,933,873	30,277	11,237,108
Value over \$500 up to \$800 .....	6,632	4,516,306	10,137	5,676,340	15,813	10,982,767
Value over \$800 to \$1200 .....	5,683	6,045,128	7,870	6,718,600	15,166	16,125,285
Value over \$1200 to \$2000 .....	1,378	2,106,831	3,349	4,060,190	3,218	4,859,126
Value over \$2000 .....	547	1,503,193	795	1,965,945	1,326	3,625,451
Total passenger cars, except electric .....	22,278	17,289,250	29,985	21,354,948	65,800	46,829,737
PARTS, ETC.						
Parts, except engines and tires .....	..	1,037,445	..	785,062	..	2,482,962
Automobile accessories .....	..	5,742,602	..	5,602,104	..	13,431,108
Automobile unit assemblies .....	..	3,172,593	..	3,798,914	..	8,784,291
Automobile parts for replacement .....	..	664,634	..	771,017	..	1,460,713
Automobile service appliances (n. e. s.) .....	..	7,222	24	21,529	39	23,472
Station and warehouse motor trucks .....	19	52,649	96	40,047	427	119,056
Trailers .....	164	1,300	4	65,076	6	35,138
Airplanes, seaplanes and other aircraft .....	..	4,873	..	9,437	..	49,802
Parts of airplanes, except engines and tires .....	..	..	..	..	..	..
BICYCLES						
Bicycles .....	339	9,459	655	19,476	1,048	31,379
Motorcycles .....	2,906	631,368	2,079	464,010	7,628	1,655,370
Parts and accessories, except tires .....	..	183,448	..	137,095	..	505,993
INTERNAL COMBUSTION ENGINES						
Stationary and Portable						
Diesel and Semi-Diesel .....	56	114,141	69	91,597	184	385,669
Other stationary and portable:						
Not over 10 HP .....	3,116	279,322	3,109	221,656	6,974	625,468
Over 10 HP .....	92	95,470	120	110,335	553	479,667
Automobile engines for:						
Motor trucks and buses .....	377	44,955	452	56,997	1,095	130,235
Passenger cars .....	20,167	1,924,382	10,063	1,301,433	42,623	4,009,374
Tractors .....	78	66,658	70	52,351	268	166,262
Aircraft .....	17	38,025	3	8,689	36	102,268
Accessories .....	..	443,663	..	418,355	..	990,832
IMPORTS						
Automobiles and chassis (dutiable) .....	44	91,953	35	59,362	165	272,759
Other vehicles and parts for them (dutiable)	..	4,733	..	16,679	..	11,593
REIMPORTS						
Automobiles (free from duty) .....	9	6,724	18	30,931	34	54,293
					42	83,561

### A.A.A. Bus Membership to be Increased to 2500

WASHINGTON, May 2—Total membership in the bus division of the American Automobile Association will be increased to 2500 operators, with a total of from 18,000 to 20,000 buses, within the next nine months, it was predicted here this week by officials of the division.

There are now about 1500 operators, controlling more than 12,000 buses, representing 40 per cent of the total of motor carriers in the United States, now enrolled. Regional and state groups are now being established in 15 additional states, and efforts are being made to strengthen the organization in states where the largest number of buses are in operation.

### Buses Threaten Railroads

WASHINGTON, May 2—The motor bus-railroad fight has broken out in British Guiana, where the situation has become so acute that the government has been compelled to begin an investigation, according to word received this week by the U. S. Department of Commerce. It has been reported that motor bus competition is so serious that there is talk of scrapping the railways.

### Form Garage Association

BUFFALO, May 2—The International Garage Association has been formed here for the mutual protection of large garage owners and for the ex-

change of business ideas and operating policies. M. C. Dorntge, this city, was named president; A. A. Kerr, Cleveland, vice-president, and I. W. Steele, Rochester, treasurer. The directors in addition to the officers are O. H. Owens, Montreal; James Richdale, Boston, and G. H. Wogan, York, Pa.

### White Shows Fleet Gains

CLEVELAND, May 2—The annual roll call of the White Co. shows 1104 companies and individuals owning 39,587 trucks and buses in fleets of 10 or more on Jan. 1, 1927. The largest single fleet numbers 2030, owned by the Gulf Refining Co. Seven fleets numbered from 525 to 1105; 54 fleets numbered 100 or more; 146 numbered 50 or more, and 368 more than 25 each. Net gains over the previous year's roll call were 143 fleet owners and 4102 units.

### Compulsory Insurance Before Parliament

WASHINGTON, May 2—Compulsory automobile insurance is being seriously considered by the British Parliament, the U. S. Department of Commerce was informed this week. The attitude of the insurance companies and the public toward insertion of a clause in the roads bill making it compulsory for motorists to insure against third party risk is being sought.

### Studebaker Offers Two Custom Touring Models

SOUTH BEND, May 2—Custom touring models have been added by the Studebaker Corp. to its standard six line, in five and seven-passenger types. The five-passenger model sells for \$1,165 and the larger car for \$1,245. The five-passenger model is finished in two-tone brown with upholstery in duotone gray and brown Spanish grain leather and duotone gray and brown hood materials. The top bows and steering wheel are in natural wood finish. The seven-passenger is finished in two shades of blue.

### Chrysler Exports Gain 74.1%

DETROIT, May 2—Chrysler overseas sales during the first three months of 1927 have shown an appreciable gain, according to officials of the company, over the previous quarter in the company's history, running 74.1 per cent ahead of the first quarter of 1926. March was the greatest export month Chrysler ever has enjoyed, exceeding March, 1926 by 80.5 per cent. Exports in 1926 were 60 per cent above 1925.

### To Sell Barberton Plant

BARBERTON, OHIO, May 2—The Rubber Products Co. will be sold at private sale as a going concern, according to counsel for the bankrupt corporation. Negotiations are being conducted with several prospective buyers.

## Men of the Industry and What They Are Doing

### Moore Made President of Great Lakes Board

Kenneth A. Moore, assistant traffic manager and western representative of the National Automobile Chamber of Commerce was elected president of the Great Lakes Regional Advisory Board at the annual convention held in Cleveland, May 4. The board, which comprises more than 2000 shipper members is the largest shipper organization in the United States.

The new president of the board has had a broad experience in the railroad and automotive industry. He started as secretary to a railroad general freight agent in 1905. In 1916 he was sent to Cincinnati as a general agent where he remained until Director General McAdoo closed up the so-called "off line agencies." During the war he was located as chief clerk in the joint Traffic and Operating Service Bureau of the New York Central at Toledo. After the war he was promoted to general agent of the New York Central at Detroit. From this position he was appointed assistant traffic manager and western representative of the National Automobile Chamber of Commerce.

### Reiter Leaves Buick

Virgil Reiter, Jr., director of publicity of the Buick Motor Co., has resigned to accept a position with the Green, Fulton and Cunningham advertising agency in Chicago. Mr. Reiter joined Buick two years ago, upon graduating from the University of Michigan, and during his time with Buick became well known throughout the industry. He and Mrs. Reiter will move to Chicago.

### Watson and Nieman Named

Charles O. Watson has been appointed direct factory representative by the Kempsmith Mfg. Co., Milwaukee, in the territory east of Pittsburgh, and A. C. Nieman has been appointed factory representative in Cleveland. Both representatives will act as sales engineers for Kempsmith dealers. Mr. Watson was formerly Buffalo manager for Manning, Maxwell & Moore, Inc.

### Butler Buys Peerless Branch

W. E. Butler, who has been actively identified with the automobile business for the past 20 years, has purchased the Peerless branch in Chicago. The company headed by Mr. Butler will be known as Butler Motors, Inc., with executive offices at 2251 Michigan Ave.

### Murphy Heads Olds Zone

F. Quinn Murphy has been appointed manager of the Oldsmobile Lansing zone. Mr. Murphy has been associated with Oldsmobile for five years, starting first in the Lansing zone and later becoming assistant to the zone manager.



**Kenneth A. Moore**

*Who has been elected president of the Great Lakes Regional Advisory Board*

### Smith Now Servel Official

Colonel Frank E. Smith has been named executive vice-president of the Servel Corp. Colonel Smith, who recently has been acting as industrial engineer and financial counsellor, has a record of service in the automobile industry dating from 1909. Some of his automotive connections were with Maxwell-Briscoe, National Spring, Premier and Republic Motor Truck, of which in 1920 he became president and general manager.

### Curtis Named by Acme

J. T. Curtis has been appointed assistant sales manager of the Acme Electric & Mfg. Co., Cleveland, specializing in the merchandising of its radio products. He has been engaged in sales work for a number of years and is widely known.

### Oberheu Finishes Survey

Fred A. Oberheu, sales manager of the United Motor Service, has returned to Detroit from a six weeks' survey of field conditions in southern and western United States and western Canada.

### *Tracy Soon to Leave Hospital*

W. R. Tracy, vice-president in charge of sales of the Oakland Motor Car Co., who has been confined to a hospital for the last ten days or so, where he underwent an operation, is expected to return to his duties soon.

### Geyser to Handle Sales of Yellow Cab Division

P. H. Geyser, vice-president of the Yellow Truck & Coach Mfg. Co., has been put in charge of sales of the cab division of the Yellow Cab factory, according to a statement by John Hertz, chairman of the board. Mr. Hertz stated that expansion plans in various divisions made it necessary to segregate the sales division so that one chief executive is in charge. Assisting Mr. Geyser will be H. A. Prussing and H. A. Yagle.

### Fisher Heads Steel Company

Charles A. Fisher has been elected president of the Jones & Laughlin Steel Corp. to fill the vacancy caused by the death of W. L. Jones late last year. B. F. Jones, 3rd, a grandson of the late B. F. Jones, founder of the business, was elected vice-president and secretary. T. M. Girdler, vice-president in charge of operations, was made a member of the executive committee. Mr. Fisher began his business career in 1898 when he joined Jones & Laughlin as a bookkeeper.

### Ford Loses Fred Allison

Fred Allison has resigned as chief electrical and mechanical engineer of the Ford Motor Co. to take up consulting work. Mr. Allison has opened offices in the Francis Building, Detroit, and will work in association with H. R. Van Decenter, Inc., of New York City. Mr. Allison had been with the Ford organization for 20 years.

### Malm Made Western Manager

The Lincoln Electric Co., of Cleveland, announces the appointment of Royal D. Malm as western district sales manager, with headquarters at Chicago. Mr. Malm is an engineering graduate from Case School of Applied Science, Cleveland.

### Van Sicklen With Broker

Norton H. Van Sicklen, Jr., who was formerly business manager of *Motor Age* and since 1922 has been an official of the Elgin Clock Co., has become associated with A. B. Leach & Co., Inc., brokers.

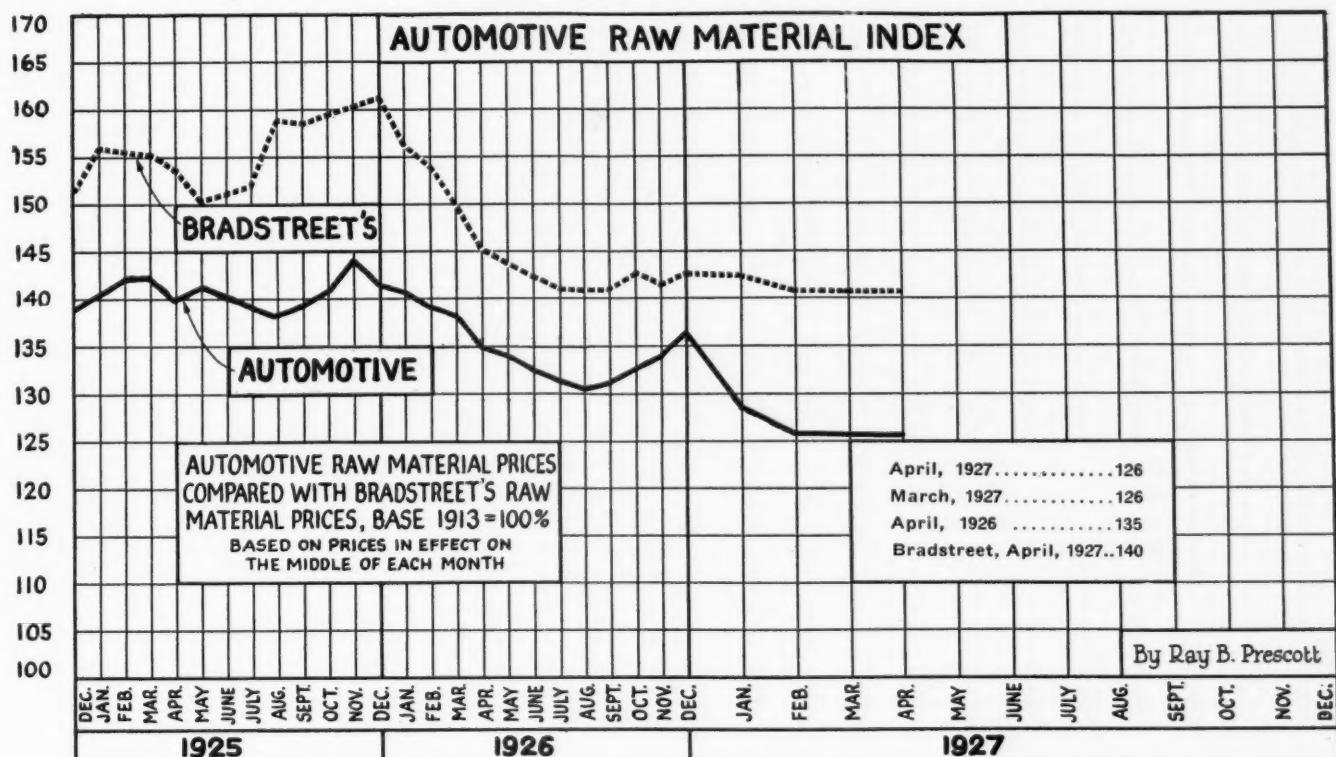
### O'Connor Quits Factory

T. A. O'Connor, formerly Detroit service manager for the Studebaker Corp. of America, has been appointed sales manager for the Cass Motor Sales Co., Detroit, Studebaker dealer.

### Bucklin Bank Founder

Vail R. Bucklin, first vice-president of the Stewart-Warner Speedometer Corp., Chicago, is one of the founders of the new Congress Trust & Savings Bank, Chicago.

## Prices of Raw Materials Hold to March Levels



### Fisher Body Co. to Double Personnel

DETROIT, May 1—The new plant of the Fisher Body Co., at Flint, which is producing closed bodies for the Buick Motor Co., is now employing 2500 persons and will increase the number to 5000 within six weeks' time, according to an announcement this week. When the plant is entirely completed it is expected that approximately 10,000 workers will be on the payroll. The company expects to be making approximately 600 bodies a day by July 1.

#### Iowa Shows 29,992 Gain

DES MOINES, May 2—The automobile business in Iowa isn't following agriculture into a depression, according to reports of registrations for the first two months of the year which show a total gain of 29,992 motor vehicles over the first two months of 1926.

W. M. Colladay, superintendent of the motor vehicle department of the secretary of state's office, reported a total registration on March 1 of 589,923 vehicles, made up of 544,111 cars, 44,532 trucks, 1147 motorcycles and 133 trailers. In 1926 the total was 559,931, including 518,870 cars, 39,629 trucks, 1310 cycles and 122 trailers.

#### Philadelphia Gains 77 Per Cent

PHILADELPHIA, May 2—Retail car sales in the Philadelphia District in March, as reported to the Federal Reserve Bank, were 77 per cent larger than in February and 35 per cent larger than in March, 1926. The largest gains in sales were in cars selling under \$1,000 and over \$2,000. Medium priced

car sales increased over February but were under March, 1926. Used cars sold in greater volume than in the preceding month or the same month last year.

As a result of the large sales volume, new car stocks were noticeably smaller than in the previous month or in the same month of 1926. Used car stocks were reduced.

### Five Manufacturing Firms Join N.S.P.A.

DETROIT, May 5—Five manufacturer members and four jobber members have been elected to active membership in the National Standard Parts Association, according to announcement of E. P. Chalfant, executive vice-president.

The new manufacturer members are McQuay-Norris Mfg. Co., St. Louis; Pyrene Mfg. Co., Newark, N. J.; Norma-Hoffmann Bearings Corp., Stamford, Conn.; E. M. Smith Co., Los Angeles, and U. S. Electrical Tool Co., Cincinnati.

This brings the total membership of the association up to 120 jobber members and 111 manufacturers, according to Mr. Chalfant.

#### Coast to Take 15% of Gardners

ST. LOUIS, May 2—Owing to especially favorable crop conditions on the Pacific Coast, Gardner Motor Co., Inc., expects that this region will absorb 15 per cent of the total Gardner output in 1927. Reports on the excellent sales outlook was brought back to the factory by Russell E., Jr., and Fred W. Gardner who have just returned after an extensive trip through the West.

### Jordan Motor Now in Capacity Production

NEW YORK, May 3—According to a statement issued by Edward S. Jordan, president, capacity production now attained by the Jordan Motor Car Co. indicates that the company has turned the corner after going through a period of low earnings in anticipation of production on the new little custom Jordan.

Considering the reduction of \$500 in the price of the line eight series, the statement points out that first quarter results show a comparatively small loss. For the first quarter, ended March 31, after expenses, depreciation, etc., were charged off, a net loss of \$112,672 is shown compared with a profit of \$146,381 for the first quarter of 1926.

#### Offer Pontiac Delivery Chassis

PONTIAC, April 30—Oakland Motor Car Co. is offering a Pontiac de luxe delivery chassis priced at \$585. The chassis includes interchangeable bronze-backed bearings, large piston pins, honed cylinders, and a lubrication system which circulates 250 gal. of oil an hour at an average speed of 35 m.p.h. Heavy duty type tires and heavier rear springs are also features.

#### Packard Motors to China

DETROIT, May 1—The Packard Motor Car Co. has shipped six 600 hp. airplane motors to the Pacific Coast from whence they will be rushed to China for use in airplanes of the U. S. Marine Corps.

## Steel Freight Rates \$2,000,000 Too High

DETROIT, April 30—The automobile industry and other purchasers of iron and steel in the Detroit area are being discriminated against in the matter of freight rates, according to testimony presented to Johnson B. Campbell, of the Interstate Commerce Commission at the Detroit hearing in the iron and steel freight rate investigation which is part of general freight rate investigation under the Hoch-Smith resolution. Hearings have been held at Pittsburgh and Columbus. The next one is at Chicago, May 12.

L. G. MacComber, traffic manager of the Detroit board of commerce, testified that Detroit is the largest single consuming market of iron and steel in the world, using one-thirteenth of total production. The amount of tonnage equals six trainloads into Detroit daily and the overcharge costs local buyers about \$2,000,000 annually. He suggested that Detroit be grouped with Toledo or some other southern point as a means of equalizing the condition.

Upstate traffic managers representing Flint, Pontiac, Lansing, Jackson, Muskegon and Saginaw attacked the zone basis and pleaded that it be abolished because it discriminates against the upstate shipper.

### Sweden Cuts Parts Duty

NEW YORK, May 2—Word has been received here that the Swedish Parlia-

### Coming Feature Issues of Chilton Class Journal Publications

June 4—Automotive Industries  
Engineering Number.

June 10—Motor World Whole-  
sale—A.E.A. Summer Meeting  
Number.

ment has rejected a suggested increase in duty on automobiles and parts, and has lowered the duty on parts from 15 to 12 per cent ad valorem. It was expected that this action would facilitate the establishment of American assembling plants in Sweden.

### American Steel Treaters Organize Columbus Group

COLUMBUS, May 2—A group of the American Society for Steel Treating has been formed here with 50 members. G. S. McFarland, consulting engineer, has been named chairman of the group; S. Z. Krumm, Buckeye Steel Casting Co., vice-chairman; G. D. Moessner, Buckeye Company, secretary-treasurer. The executive committee comprises Prof. John Younger, Ohio State University; R. T. Dawson, Jeffrey Mfg. Co.; E. B. Fury, Ralston Steel Car Co.; R. E. Christin, Columbus Bolt Works Co.; Prof. J. O. Lord, Ohio State University; B. C. Thiel, C. & G. Cooper Co., and H. B. Kinnear, Marion Steam Shovel Co.

## 3 Companies Join in General Brass

DETROIT, April 30—Three of the largest brass manufacturing concerns in Detroit merged this week into the General Brass Corp. Companies included in the combine are the McCrae & Roberts Co., the Michigan Lubricator Co. and the Standard Peninsular Brass Works. Manufacturing activities of the three companies will be centralized at the McCrae & Roberts plant which will be enlarged.

Officers of the new company will be W. S. Killam, president, now president of McCrae & Roberts; Elwood C. Johnston, first vice-president, now vice-president of Michigan Lubricator Co.; W. S. Chilman, second vice-president, now vice-president of McCrae & Roberts. Milton E. Czarnowski, now treasurer of McCrae & Roberts, will be treasurer, and Philip E. Welton of the Standard Peninsular Brass Works will be secretary. The board of directors will include Milton A. McCrae, John B. Corliss, Frederic G. Austin, W. S. Killam, Carlton M. Higbie, Elwood C. Johnston and W. S. Chilman.

### Forging Maker Expands

CANTON, OHIO, May 2—Expansion of the plant here of the Canton Drop Forging & Mfg. Co., maker of automotive forgings, will include a new heat treating building for forgings. The company now has a plant and equipment investment of more than \$1,500,000. Charles A. Brauchler is president and general manager.

## Calendar of Coming Events

### SHOWS

Budapest .....	June 4-15
Chicago .....	Nov. 7-12
Exposition, Coliseum, Automotive Equipment Association.	
Chicago .....	Jan. 28-Feb. 4
National, Coliseum, National Automobile Chamber of Commerce, including special Shop Equipment Exhibit.	
Cleveland .....	Sept. 19-23
Exposition, Public Auditorium, National Machine Tool Builders' Assn.	
Cleveland .....	Oct. 3-7
Exhibition, Public Auditorium, American Electric Railway Ass'n.	
Cleveland .....	Nov. 14-19
Convention Hall, National Standard Parts Association.	
Cologne .....	May 20-31
International Commercial Transport Exhibition.	
London .....	Oct. 14-22
Olympia Passenger Car Show.	
London .....	Nov. 17-26
Olympia Truck Show.	
Melbourne .....	May
International Motor Show.	
New Haven, Conn. ....	Sept. 6-9
Machine Tool Exhibition.	
New York .....	Jan. 7-14
National, Grand Central Palace, National Automobile Chamber of Commerce, including special Shop Equipment Exhibit.	
Paris .....	Oct. 6-16
Grand Palais.	

### CONVENTIONS

American Automobile Association, Bus Division Meeting, Bellevue-Stratford, Philadelphia.....	June 15
American Automobile Association, Annual Meeting, Ritz-Carlton Hotel, Philadelphia .....	June 16-17
American Drop Forging Institute, French Lick Springs, Ind. ....	May 17-19

### Sectional

Chicago, May 10—Interesting High-Speed Two-Stroke Engine Design—Lee W. Oldfield.
Columbus, May 14—Inspection and demonstration of automotive engineering facilities of Ohio State University.
Detroit, May 19—Production Meeting.
Lafayette, Ind., May 12—Inspection visit to Purdue University. Supper. Relation of the Universities to Automobile Manufacturers—J. H. Hunt.
Los Angeles, May 13—Supper. Tires—Their Construction, etc.—Alvin N. Day.
New York City, May 19—Motor Equipment—Donald Blanchard.
Philadelphia, May 10—The Armstrong Seadrome—E. R. Armstrong; Crop Dusting by Airplane—Edgar N. Gott; Local Flying—Lieut. J. G. Ray; Aerial Photography—E. H. Cahill; Airport and Airway Lighting—E. A. Leinroth.
Philadelphia, May 13—Spring outing.
San Francisco, May 12—Supper. Short Haul Trucks—W. W. MacDonald; Paving and Its Relation to Automotive Transportation—A. J. Eddy.

### RACES

Abilene, Texas .....	July 4
Altoona, Pa. ....	June 11
Altoona, Pa. ....	Sept. 5
Atlantic City .....	Sept. 24
Belgian Grand Prix, Spa-Francorchamps .....	July 9-10
British Grand Prix, Brooklands.....	Oct. 1
Charlotte, N. C. ....	July 11
Detroit .....	Sept. 19
French Grand Prix, Monthery.....	July 3
Indianapolis .....	May 30
Los Angeles .....	Nov. 27
Salem, N. H. ....	June 25
Salem, N. H. ....	Oct. 12
Syracuse, N. Y. ....	Sept. 3